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PRAIRIE REGIONAL STUDIES IN ECONOMIC GEOGRAPHY NO. 4

THE CAMROSE-VEGREVILLE REGION OF ALBERTA

J.W. Channon, D. Zasada

Economics Branch, Canada Department of Agriculture

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Preface

This report is the fourth in a series of Prairie Regional Studies in Economic Geography; the first being a report on the Riverhurst Region of Saskatchewan, the second the Boissevain Region of Manitoba, the third the Rockglen Region of Saskatchewan.

Whenever possible, data for the whole region are presented, but the emphasis is on grain farms and the communities and facilities serving them. What is reported is a collection of facts and detailed tabular material describing the socio-economic activity of the region, from which the reader may gain an appreciation of the relative importance of the communities and farms situated there.

Our particular method of ranking communities is not perfect; for instance, it ignores dollar-volume of retail sales in each community and it does not weigh the kind of service activity present. Such refinements should be attempted by other workers with other purposes. When tabulated by communities according to the number of services present, the pertinent data assume a pattern that provides an insight into the viability of the communities.

It will be noted that we have refrained from drawing inferences, arriving at conclusions and making recommendations. Again, it is hoped that other workers will do so. We have been content to provide some of the parameters, bearing in mind the very significant changes that have been underway for several years especially in the grain production, collection and distribution system. The reader will find that simultaneous examination of two or more tables in this report will frequently yield some interesting relationships which will suggest new avenues of investigation.

PRAIRIE REGIONAL STUDIES IN ECONOMIC GEOGRAPHY

Study No. 4 - The Camrose - Vegreville Grain Growing Region of Alberta

The Camrose - Vegreville Grain Growing Region of Alberta comprises the areas, or hinterlands, served by 23 grain delivery points and these are listed in ascending order of ranking of the community. (See Appendix 1 for a listing of communities and their service activities.)

Classification of Communities

For the purpose of this study, the method of community classification is based on a modification of the system devised by the Saskatchewan Royal Commission on Agricultural and Rural Life (1957). The criterion for classification is the number of service activities present in the various communities studied; "Too small to classify" refers, primarily, to former grain delivery points or to existing delivery points where a single elevator is the only service activity present. If there are from 2 to 8 services it is a hamlet; if from 9 to 32 a village and if from 33 to 59 it is a town. Greater towns have 60 or more service activities (Table 1).

Of the group "too small to classify" only Bardo has an active service; that being a grain elevator. In the hamlet classification, the predominant activity is the grain elevator. By examining Appendix 1, the listing of the services present, one gets an appreciation of the relative importance of the communities in the area.

TABLE 1. CLASSIFICATION OF COMMUNITIES IN THE STUDY AREA

Too Small to Classify 0-1 Services	Hamlets 2-8 Services	Villages 9-32 Services	Towns 33-59 Services	Greater Towns 60 or more Services
Demay Dinant Fitzallen Shonts Bardo	Dodds Haight Kaleland Norma Inland Royal Park Warwick	Armena Ohaton Kingman Round Hill Hay Lakes Lavoy Hairy Hill Bawlf	Riley	Willingdon Mundare Holden Tofield Two Hills Vegreville Camrose

Farm Population

The four rural municipalities shown in Table 2 enclose the study area and allows one to use census data to describe the demography. For the three census years shown one sees a general trend off farm. For the province of Alberta as a whole, farm population has declined by 15 per cent between 1956 and 1966, from 332,191 to 281,583. This resulted in a rather sharp decline in the proportion of persons on farm from 29.5 per cent in 1956 to 19.2 per cent in 1966 for the province as a whole. Such a decrease reflects the increase in non-farm job opportunities, with a consequent migration from rural to urban living. In the study area, as shown in Table 2, the farm population declined by 18 per cent, from 28,367 in 1956 to 23,302 in 1966.

TABLE 2. FARM POPULATION IN THE STUDY AREA BY RURAL MUNICIPALITY, AND PROVINCE, CENSUS YEARS, 1956 TO 1966

	1956	1961	1966
Two Hills	6,677	5,530	5,151
Minburn	6,511	5,284	5,324
Beaver County	6,387	5,584	5,355
Camrose	8,792	7,638	7,472
TOTAL	28,367	24,036	23,302
Farm Population in Alberta	332,191	287,814	281,583

Source: Dominion Bureau of Statistics, Ottawa.

Population of Communities

Between the census years 1941 and 1966 the population of the province of Alberta increased by 84 per cent (Table 3). The communities in the area increased by over 100 per cent. The increase in community population is due largely to the fantastic growth of Camrose which increased from 2,598 in 1941 to 8,362 in 1966. Generally speaking, the greater towns have shown increases in population over the time period, while the communities classified as villages or smaller are declining in population.

While the total population of the communities in the area increased by over 100 per cent between 1941 and 1966, the total population of census division #10 declined by 12 per cent. This again is an indication of persons moving off farms and into larger centres which offer employment opportunities. Two Hills is one community which offers employment opportunities other than the normal ones such as service stations, banks etc. Chemcell (1963) Limited employs approximately 100 persons year round of which some 50 came from the farm population outside the immediate community.

TABLE 3. POPULATION OF COMMUNITIES IN THE STUDY AREA, CENSUS YEARS 1941 TO 1966

	1941	1951	1956	1961	1966
<i>Too Small To Classify</i>					
Dinant	14	15	9	n.a.	n.a.
Fitzallen	n.a.	n.a.	n.a.	n.a.	n.a.
Shonts	17	n.a.	n.a.	n.a.	n.a.
Bardo	58	n.a.	n.a.	n.a.	n.a.
<i>Hamlets</i>					
Dodds	25	20	26	19	12
Haight	33	17	22	3	6
Kaleland	18	19	14	n.a.	n.a.
Norma	46	16	14	4	14
Inland	56	29	19	6	21
Royal Park	17	16	17	18	15
Warwick	23	40	29	n.a.	20
<i>Villages</i>					
Armena	27	45	45	32	35
Ohaton	53	62	69	88	76
Kingman	94	111	117	108	93
Round Hill	222	207	180	160	122
Hay Lakes	154	231	193	233	196
Lavoy	178	122	127	131	118
Hairy Hill	n.a.	205	183	173	136
Bawlf	227	236	287	203	220
<i>Towns</i>					
Riley	323	406	495	469	438
<i>Greater Towns</i>					
Willingdon	420	281	431	429	419
Mundare	756	596	650	603	564
Holden	361	504	544	556	503
Tofield	551	692	800	905	952
Two Hills	210	525	713	826	1,056
Vegreville	1,696	2,223	2,574	2,908	3,598
Camrose	2,598	4,131	5,817	6,939	8,362
Study Area Total	8,177	10,749	13,375	14,813	16,976
Census Division #10	79,639	70,677	71,500	70,177	70,211
Province of Alberta	796,169	939,501	1,123,116	1,331,944	1,463,203

n.a.: Not available

Source: Dominion Bureau of Statistics, Ottawa.

Population by Age and Sex Groups

Tables 4 and 4A contain data from the 1966 census for incorporated towns and villages in the area as well as for the rural municipalities making up the area.

In most of the incorporated towns and villages there are more males than females. Vegreville and Camrose depart from the trend substantially, with more females than males. In the age group 20-24 years females greatly outnumber males and may indicate that women move into these two communities for employment opportunities.

The age group that most closely represents the effective working population is the 20 to 69 years of age group. In the province of Alberta this group comprises 51.6 per cent of the population. The study area closely approximates this at 51.1 per cent. People in the retired age group make up a larger proportion of those living in communities than on farms. This would indicate that people in this age group move off farms and into adjacent communities. The proportion of people under 20 years of age is larger in the rural municipalities than in the communities of the study area. However, the data would seem to imply that there is a movement off the farms in the immediate post-school age group.

TABLE 4. POPULATION BY SPECIFIED AGE GROUPS AND SEX FOR RURAL MUNICIPALITIES, AND INCORPORATED COMMUNITIES
IN THE STUDY AREA, 1966

Communities	Total	YEARS OF AGE										70 and over
		0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	
Lavoy	T. 118 M. 65 F. 53	11 4 7	9 4 5	12 4 8	5 3 2	5 3 2	14 11 3	15 7 8	10 4 6	21 14 7	5 4 1	11 7 4
Hairy Hill	T. 136 M. 68 F. 68	4 2 2	15 7 8	11 7 4	11 3 8	4 2 2	10 7 3	14 8 6	23 7 16	20 14 6	8 2 6	16 9 7
Hay Lakes	T. 196 M. 102 F. 94	14 7 7	32 15 17	18 9 9	11 7 4	6 5 1	15 7 8	15 8 7	27 14 13	20 11 9	8 4 4	30 15 15
Bawlf	T. 220 M. 110 F. 110	32 18 14	26 8 18	21 11 10	17 8 9	8 2 6	28 16 12	14 6 8	19 11 8	26 10 16	8 5 3	21 15 6
Willingdon	T. 419 M. 193 F. 226	37 12 25	38 15 23	33 15 18	34 20 14	12 4 8	37 12 25	43 24 19	61 27 34	44 20 24	33 15 18	47 29 18
Ryley	T. 438 M. 231 F. 207	39 21 18	45 19 26	47 27 20	41 19 22	25 17 8	43 23 20	41 22 19	47 23 24	47 23 24	18 13 5	45 24 21
Holden	T. 503 M. 260 F. 243	26 15 11	55 31 24	51 30 21	36 16 20	23 13 10	33 13 20	61 29 32	57 31 26	74 39 35	30 15 15	57 28 29
Mundare	T. 564 M. 290 F. 274	39 24 15	36 9 27	41 29 12	40 23 17	31 20 11	38 21 17	60 29 31	54 24 30	89 39 50	42 26 16	94 46 48
Tofield	T. 952 M. 489 F. 463	92 51 41	77 43 34	91 51 40	104 57 47	52 27 25	76 40 36	97 42 55	109 54 55	98 46 52	50 24 26	106 54 52
Two Hills	T. 1,056 M. 524 F. 532	95 39 56	104 53 51	106 53 53	91 51 40	60 26 34	130 70 60	120 63 57	130 62 68	98 46 52	46 19 27	76 42 34

(continued)

TABLE 4. POPULATION BY SPECIFIED AGE GROUPS AND SEX FOR RURAL MUNICIPALITIES, AND INCORPORATED COMMUNITIES
IN THE STUDY AREA, 1966 (concluded)

YEARS OF AGE												
	Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over
Vegreville												
T.	3,598	356	340	327	289	249	370	388	378	358	180	363
M.	1,693	172	147	163	131	95	178	190	181	143	81	212
F.	1,905	184	193	164	158	154	192	198	197	215	99	151
Camrose												
T.	8,362	857	844	773	701	514	883	807	821	681	287	1,194
M.	4,093	450	414	399	341	218	434	384	370	335	131	617
F.	4,269	407	430	374	360	296	449	423	451	346	156	577
Rural Municipalities												
Two Hills												
T.	5,528	588	596	697	583	283	519	669	746	527	113	207
M.	3,021	297	312	357	324	164	271	366	411	318	71	130
F.	2,507	291	284	340	259	119	248	303	335	209	42	77
Minburn												
T.	5,591	570	644	721	583	266	497	726	778	505	138	163
M.	3,015	301	329	343	330	160	249	373	444	298	100	88
F.	2,576	269	315	378	253	106	248	353	334	207	38	75
Beaver County												
T.	6,009	665	716	713	586	304	547	739	809	570	126	234
M.	3,300	342	391	362	343	172	299	378	456	349	81	127
F.	2,709	323	325	351	243	132	248	361	353	221	45	107
Camrose												
T.	8,285	852	998	1,055	839	417	770	987	1,104	719	222	322
M.	4,416	426	506	521	446	232	405	500	610	444	132	194
F.	3,869	426	492	534	393	185	365	487	494	275	90	128
Study Area Total												
T.	41,975	4,277	4,575	4,717	3,971	2,259	4,010	4,796	5,173	3,897	1,314	2,986
M.	21,870	2,181	2,303	2,381	2,122	1,160	2,056	2,429	2,729	2,149	723	1,637
F.	20,105	2,096	2,272	2,336	1,849	1,099	1,954	2,367	2,444	1,748	591	1,349
Division #10 Total												
T.	70,211	7,206	7,701	7,880	6,625	3,835	6,840	7,993	8,430	6,451	2,274	4,976
M.	36,618	3,716	3,934	4,018	3,476	1,994	3,512	4,073	4,410	3,522	1,226	2,737
F.	33,593	3,490	3,767	3,862	3,149	1,841	3,328	3,920	4,020	2,929	1,048	2,239
Provincial Total												
T.	1,463,203	173,568	179,540	157,658	128,999	102,005	186,681	184,532	145,224	100,986	35,195	68,815
M.	746,245	89,078	91,627	81,038	64,826	49,933	94,504	94,122	73,930	53,093	18,352	35,742
F.	716,958	84,490	87,913	76,620	64,173	52,072	92,177	90,410	71,294	47,893	16,843	33,073

T. - Total
M. - Male
F. - Female

Source: Dominion Bureau of Statistics, Ottawa.

TABLE 4A. PROPORTION OF POPULATION FALLING WITHIN THREE SPECIFIED AGE GROUPS, 1966

	Pre-School and School Age Groups (0 to 19 years)	Working Age Group (20 to 69)	Retired Aged Group (70 and Over)
	- per cent -		
Communities			
Lavoy	31.4	59.3	9.3
Hairy Hill	30.1	58.1	11.8
Hay Lakes	38.3	46.4	15.3
Bawlf	43.6	46.8	9.6
Willingdon	33.9	54.9	11.2
Ryley	39.3	50.4	10.3
Holden	33.4	55.3	11.3
Mundare	27.7	55.7	16.6
Tofield	38.3	50.6	11.1
Two Hills	37.5	55.3	7.2
Vegreville	36.5	53.4	10.1
Camrose	38.0	47.7	14.3
Rural Municipalities			
Two Hills	44.6	51.7	3.7
Minburn	45.0	52.1	2.9
Beaver County	44.6	51.5	3.9
Camrose	45.2	50.9	3.9
Study Area Total	41.8	51.1	7.1
Division # 10 Total	41.9	51.0	7.1
Provincial Total	43.7	51.6	4.7

School Enrolment

It is evident from the school enrolment figures (Table 5) that the study area is following the trend towards school consolidation which is taking place throughout Western Canada. The communities classified as "too small to classify" and "hamlets" do not contain schools. High schools exist in only two of the villages, the town of Ryley and all the greater towns. One of the problems in the scheme of consolidation is the adequacy of facilities for busing children to and from schools. On the other hand, consolidation does alleviate some of the other problems associated with rural education. In particular, it permits improved levels of teacher recruitment and retention.

TABLE 5. SCHOOL ENROLMENT IN THE STUDY AREA, BY GRADES, SCHOOL YEAR 1967-68

	1	2	3	4	5	6	7	8	9	10	11	12	Total
<i>Too Small to Classify</i>													
Demay													
Dinant													
Fitzallen													
Shonts													
Bardo													
<i>Hamlets</i>													
Dodds													
Haight													
Kaleland													
Norma													
Inland													
Royal Park													
Warwick													
<i>Villages</i>													
Armena													
Ohaton													
Kingman													
Round Hill													
Hay Lakes													
Lavoy													
Hairy Hill													
Bawlf													
<i>Towns</i>													
Ryley													
<i>Greater Towns</i>													
Willingdon													
Mundare													
Holden													
Tofield													
Two Hills													
Vegreville													
Camrose													
	3	7	7	14	7	11	16	8	-	-	-	-	73
Pupils Attend Bawlf School	9	10	16	16	13	10	15	16	16	-	-	-	121
	12	14	19	11	14	12	9	15	11	31	20	18	186
(Grades 1-6 Leduc Central or New Sarepta)	10	10	12	13	15	18	18	13	18	-	-	-	127
	16	17	21	15	16	19	6	17	11	-	-	-	138
	32	30	30	44	31	34	28	35	28	25	30	33	380
	33	36	33	26	34	31	35	38	41	24	23	23	377
	25	24	22	28	22	28	30	27	23	40	50	30	349
	31	39	32	29	35	29	40	34	41	38	27	31	406
	34	35	40	35	35	34	24	42	60	48	38	38	463
	53	54	46	45	43	39	52	52	49	52	44	33	562
	50	64	61	67	57	64	54	66	65	41	48	46	683
	80	62	86	68	90	82	88	95	95	106	142	155	1,149
	118	128	138	141	121	142	127	122	135	186	189	222	1,769

Source: Department of Education, Edmonton.

Post Office Revenue

Post office revenues serve as an indicator of the socio-economic activity in a community and the area it represents. Post offices in the communities grouped as too small to classify have been closed for some time. In the hamlet category post offices exist (1967-68) in four of the seven communities. All of these however, have declining revenues and their future existence is doubtful. The largest growths of revenues took place at Vegreville, Two Hills and Camrose which increased by 73,78 and 78 per cent respectively. In absolute terms Camrose had the largest dollar value increase; from \$65,079 to \$116,284. In 1967-68 Camrose accounted for over 50 per cent of post office revenues in the whole study area. (See Table 6).

TABLE 6. POST OFFICE REVENUE IN THE STUDY AREA, FISCAL YEARS, 1958-59 TO 1967-68

	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
-- dollars --										
<i>Too Small to Classify</i>	23 (Closed 1959)									
Dinant	273									
Fitzallen	(No Record)									
Shonts	(No Record)									
Bardo	(Closed 1914)									
<i>Hamlets</i>										
Dodds	199	277	225	190	162	118	131	37 (Closed 1965)		49
Haight	139	124	93	102	92	101	118	98	115	
Kaleland	(Closed 1957)									
Norma	127	111	97	70	90	80	84	85 (Closed 1966)		
Inland	95	74	61	72	64	96	77	65	69	61
Royal Park	732	545	665	277	213	164	210	258	236	221
Warwick	186	145	132	89	82	75	92	119	132	101
<i>Villages</i>										
Armena	617	586	567	663	657	615	658	683	630	677
Ohaton	1,299	1,255	1,411	1,543	1,733	1,894	1,930	1,725	1,886	2,214
Kingman	877	825	961	912	943	922	951	845	949	910
Round Hill	772	798	923	955	924	960	960	867	856	796
Hay Lakes	2,273	2,213	2,457	2,511	2,567	2,423	2,729	2,715	2,646	2,558
Lavoy	1,199	1,230	1,205	1,313	1,302	1,493	1,517	1,394	1,335	1,262
Hairy Hill	1,679	1,604	1,494	1,495	1,369	1,335	1,425	1,483	1,307	1,331
Bawlf	2,263	1,958	1,951	1,870	1,820	1,779	1,865	1,829	1,722	1,749
<i>Towns</i>										
Ryley	5,749	5,759	5,679	5,841	5,682	6,071	6,573	6,670	6,661	7,028
<i>Greater Towns</i>										
Willingdon	4,360	4,203	4,270	4,570	4,604	4,486	4,938	4,858	4,785	4,696
Mundare	5,217	5,170	5,525	5,385	5,591	5,646	6,386	7,570	6,308	5,977
Holden	6,351	6,539	6,460	6,709	6,703	6,982	7,264	7,219	7,137	7,416
Tofield	10,133	9,982	11,204	10,955	11,039	11,349	12,109	12,042	12,136	13,227
Two Hills	7,382	8,169	8,379	9,358	9,559	10,816	11,111	13,166	11,232	13,236
Vegreville	28,004	29,924	31,276	33,013	37,253	37,794	42,558	44,139	44,035	48,522
Camrose	65,079	68,586	76,646	79,856	85,567	90,978	102,223	105,130	109,255	116,284

Source: Post Office Department, Ottawa.

Property Tax Assessment

The property tax assessment figures in Table 7 show the relative importance of railway property and other railway occupancies to the communities of the area. Generally speaking, the larger is the community with respect to number of service activities, the lower is the proportion of tax assessment related to the railway. This is adequately displayed in Table 7 by the points Fitzallen and Camrose where the proportions are 100 and 2.4 per cent respectively.

TABLE 7. PROPERTY TAX ASSESSMENT, FOR COMMUNITIES IN THE STUDY AREA, 1968

	Too Small to Classify				Hamlets							
	Dinant	Fitzallen	Shonts	Bardo	Dodds	Haight	Kaleland	Norma	Inland	Royal Park	Warwick	
						— dollars —						
<i>Railway Property</i>												
Station Grounds	250	1,180	700	600	420	420	550	755	290	400	540	
Roadway (R.O.W.)	500	500	500	500	500	500	500	500	500	500	500	
Buildings	60	40	—	—	150	90	340	1,210	—	180	110	
<i>Other (R.O.W.) Occupancies</i>												
Taxable Land	30	300	460	220	600	400	640	600	770	1,570	1,220	
Taxable Buildings	6,250	8,940	5,610	6,410	13,180	8,800	12,830	13,120	63,290	48,570	37,030	
Total Assessment of Railway Property	7,090	10,960	7,270	7,730	14,850	10,210	14,860	16,185	64,850	51,220	39,400	
<i>Non-Right-Of-Way Properties</i>												
Taxable Land	540	—	—	—	680	4,260	75	280	310	980	980	
Taxable Buildings	6,500	—	—	—	3,580	3,850	70	700	2,790	3,530	7,110	
Total Assessment of Non-Railway Property	7,040	—	—	—	4,260	8,110	145	980	3,100	4,510	8,090	
Total Tax Assessment	14,130	10,960	7,270	7,730	19,110	18,320	15,005	17,165	67,950	55,730	47,490	
Proportion of Tax Assess- ment derived from Railway Associated Property	50.1	100.0	100.0	100.0	77.7	55.7	99.0	94.3	95.4	91.9	83.0	

(continued)

TABLE 7. PROPERTY TAX ASSESSMENT, FOR COMMUNITIES IN THE STUDY AREA, 1968 (continued)

	Villages							Towns	
	Armena	Ohaton	Kingman	Round Hill	Hay Lakes	Lavoy	Hairy Hill	Bawlf	Ryley
	— dollars —								
<i>Railway Property</i>									
Station Grounds	300	470	340	220	1,070	1,150	570	1,350	2,750
Roadway (R.O.W.)	500	500	500	500	500	500	500	500	500
Buildings	480	30	450	1,240	6,140	4,350	4,750	4,730	7,400
<i>Other (R.O.W.) Occupancies</i>									
Taxable Land	90	70	90	180	1,210	1,070	1,670	810	2,440
Taxable Buildings	21,510	38,900	22,460	28,040	34,640	70,670	71,810	64,600	130,090
Total Assessment of Railway Property	22,880	39,970	23,840	30,180	43,560	77,740	79,300	71,990	143,180
<i>Non-Right-Of-Way Properties</i>									
Taxable Land	1,300	2,330	3,070	5,530	20,350	8,760	16,830	16,940	78,080
Taxable Buildings	24,180	50,930	52,100	97,210	235,030	106,670	120,460	218,160	416,400
Total Assessment of Non-Railway Property	25,480	53,260	55,170	102,740	255,380	115,430	137,290	235,100	494,480
Total Tax Assessment	48,360	93,230	79,010	132,920	298,940	193,170	216,590	307,090	637,660
Proportion of Tax Assessment derived from Railway Associated Property	47.3	42.9	30.2	22.7	14.6	40.2	36.6	23.4	22.4

(continued)

Carload Rail Traffic

The data regarding volume of carload rail traffic (Table 8) only serve to stress the over-riding importance of agriculture in the economic life of most delivery points in the study area. At most points the predominant traffic is outbound grain. At those points grouped as too small to classify the volume of traffic is extremely small - less than fifty cars per year. In the case of hamlets the volume of traffic increases but outbound grain remains the predominant traffic generator. Generally speaking as the classification (hamlet, village, etc.) rises so does the rail traffic generated by grain. This is related to the number of permit holders which also increases with the classification of a community. Looking ahead to Table 21 one notes a general increase in the number of permit holders as the classification of community increases. Obviously the larger points will receive more grain than the smaller ones (Table 25) and by the same token transfer more out to terminal positions.

The inbound rail traffic in the two smallest classifications of communities is virtually nil. Royal Park which had some inbound mines products (probably coal) has had this fall off in the past couple of years.

In the case of the villages of Lavoy and Hairy Hill inbound traffic fluctuates around 20 to 30 cars per year. At Ohaton the 96 inbound cars of manufactured products for 1968 are comprised of pipe from Calgary. This is likely for the pipeline and will probably be a one shot effort. In the case of pipeline construction, pipe travels by rail to the nearest rail point to the line and then is forwarded to the line itself by truck.

In the greater towns outbound traffic is heaviest at Camrose. The outbound and inbound traffic generated by Two Hills is probably largely due to Chemcell Ltd.

Inbound rail traffic obviously is generated by the larger communities which likely act as distribution centres for the smaller communities. One must keep in mind however that what is shown in Table 8 is rail traffic. Trucking which has taken much short haul movement away from rail probably serves the smaller communities. Large centres such as Camrose probably act as distribution points for trucking to many points in the study area.

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
<i>Too Small to Classify</i>																		
Demay																		
Products of Agriculture	n/a		n/a		n/a		n/a		n/a		n/a		n/a		-		n/a	
Products of Mines	n/a		n/a		n/a		n/a		n/a		n/a		n/a		-		n/a	
Products of Forests	n/a		n/a		n/a		n/a		n/a		n/a		n/a		-		n/a	
Manufactures and Misc.	n/a		n/a		n/a		n/a		n/a		n/a		n/a		1		n/a	
Total	n/a		n/a		n/a		n/a		n/a		n/a		n/a		1		n/a	
Dinant																		
Products of Agriculture	-	26	-	48	n/a		-	37	-	25	-	-	-	-	-	7	n/a	
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	n/a	
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	n/a	
Manufactures and Misc.	1	-	1	-	n/a		1	-	-	-	-	-	-	-	-	-	n/a	
Total	1	26	1	48	n/a		1	37	-	25	-	1	21 ¹	-	5	7	n/a	
Fitzallen																		
Products of Agriculture	-	35	-	73	-	50	-	40	-	46	-	22	-	25	-	22	-	13
Products of Mines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	35	-	73	1	50	-	40	-	46	-	22	-	25	-	22	-	13
Shonts																		
Products of Agriculture	n/a		n/a		n/a		-	35	-	36	-	-	-	-	-	-	-	3
Products of Mines	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	4	-
Total	n/a		n/a		n/a		-	35	-	36	-	22	-	31	-	43	4	3
Bardo																		
Products of Agriculture	-	15	-	46	n/a		-	33	-	24	-	-	-	-	-	17	-	18
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Total	-	15	-	46	n/a		-	33	-	24	-	33	-	17	-	17	-	18

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
<i>Hamlets</i>																		
Dodds																		
Products of Agriculture	-	26	-	73	n/a		-	34	-	44	-	-	-	-	-	39	-	7
Products of Mines	-	23	-	14	n/a		-	2	-	2	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	n/a		5	-	2	-	-	-	-	-	-	-	-	-
Total	-	49	-	87	n/a		5	36	2	46	1	42	-	27	-	39	-	7
Haight																		
Products of Agriculture	-	48	-	57	n/a		-	48	-	51	-	-	-	-	-	18	-	10
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Total	-	48	-	57	n/a		-	48	-	51	-	44	-	54	-	18	-	10
Kaleland																		
Products of Agriculture	n/a		n/a		-	59	n/a		-	49	-	23	-	40	1	31	1	28
Products of Mines	n/a		n/a		-		n/a		-	-	-	-	1	-	-	-	-	-
Products of Forests	n/a		n/a		1	-	n/a		-	-	-	-	-	-	-	2	-	1
Manufactures and Misc.	n/a		n/a		8	-	n/a		4	-	6	-	2	1	3	-	2	-
Animals and Products	n/a		n/a		1	-	n/a		-	-	-	-	-	-	-	-	-	-
Total	n/a		n/a		10	59	n/a		4	49	6	23	3	41	4	33	3	29
Norma																		
Products of Agriculture	-	24	-	30	-	28	-	25	-	28	-	21	-	20	-	16	-	23
Products of Mines	-	-	1	-	3	-	2	-	2	-	1	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
Total	-	24	1	30	3	28	2	25	2	28	2	21	1	20	-	16	-	23
Inland																		
Products of Agriculture	-	101	-	210	n/a		-	144	-	175	-	-	-	-	-	84	-	119
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	1	-	-	-	n/a		5	-	1	-	-	-	-	-	-	-	1	-
Total	1	101	2	210	n/a		5	144	1	175	2	144	1	114	-	84	1	119

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Royal Park																		
Products of Agriculture	n/a		n/a		n/a		-	119	-	187	-	-	-	-	-	-	-	89
Products of Mines	n/a		n/a		n/a		9	-	7	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		3	1	2	-	-	-	-	-	-	-	-	-
Total	n/a		n/a		n/a		12	120	9	187	11	131	11	145	2	74	-	89
Warwick																		
Products of Agriculture	-	162	-	235	-	189	-	156	-	215	-	135	-	159	-	137	-	128
Products of Mines	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	-	-	-	-	1	1	3	-	2	-	1	-	-	-	-	-	-	1
Total	-	162	-	235	2	190	3	156	2	215	1	135	-	159	-	137	-	129
Villages																		
Armena																		
Products of Agriculture	n/a		n/a		n/a		-	88	-	96	-	-	-	-	-	-	-	62
Products of Mines	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		1	-	1	-	-	-	-	-	-	-	-	-
Total	n/a		n/a		n/a		1	88	1	96	1	75	2	86	2	72	-	62
Ohaton																		
Products of Agriculture	n/a		n/a		-	54	n/a		-	131	-	41	-	76	-	63	-	77
Products of Mines	n/a		n/a		-	-	n/a		-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		1	-	n/a		-	-	1	-	1	-	-	-	2	-
Manufactures and Misc.	n/a		n/a		-	-	n/a		-	1	-	-	-	-	-	-	96	-
Total	n/a		n/a		1	54	n/a		-	132	1	41	1	76	-	63	98	77
Kingman																		
Products of Agriculture	-	100	-	137	n/a		-	118	-	115	-	-	-	-	-	72	-	66
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	2	-	2	-	n/a		3	-	1	-	-	-	-	-	1	-	1	-
Total	2	100	2	137	n/a		3	118	1	115	1	97	1	110	1	72	1	66

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Round Hill																		
Products of Agriculture	-	95	-	148	n/a		-	187	-	193	-	-	-	-	-	109	-	95
Products of Mines	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	-	-	-	-	n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	2	-	4	-	n/a		5	-	3	-	-	-	-	-	-	-	-	-
Total	2	95	4	148	n/a		5	187	3	193	3	137	-	145	-	109	-	95
Hay Lakes																		
Products of Agriculture	n/a		n/a		n/a		-	95	-	130	-	-	-	-	-	105	-	86
Products of Mines	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		37	-	30	-	-	-	-	-	7	-	4	-
Total	n/a		n/a		n/a		37	95	30	130	7	127	7	108	7	105	4	86
Lavoy																		
Products of Agriculture	n/a		n/a		n/a		-	269	-	289	-	-	-	-	-	-	-	188
Products of Mines	n/a		n/a		n/a		11	-	21	-	-	-	-	-	-	-	20	-
Products of Forests	n/a		n/a		n/a		1	-	4	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		8	-	7	3	-	-	-	-	-	-	2	-
Total	n/a		n/a		n/a		20	269	32	292	35	232	30	259	30	199	22	188
Hairy Hill																		
Products of Agriculture	n/a		n/a		-	208	n/a		1	206	1	125	-	195	-	135	-	125
Products of Mines	n/a		n/a		7	-	n/a		4	-	6	-	5	-	3	-	1	-
Products of Forests	n/a		n/a		-	-	n/a		-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		21	-	n/a		27	-	31	-	26	-	27	2	28	-
Total	n/a		n/a		28	208	n/a		32	206	38	125	31	195	30	137	29	125
Bawlf																		
Products of Agriculture	n/a		n/a		-	223	n/a		-	336	-	122	-	241	-	182	-	197
Products of Mines	n/a		n/a		1	-	n/a		-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		3	-	n/a		-	-	9	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		5	-	n/a		5	-	4	1	1	-	1	-	1	-
Total	n/a		n/a		9	223	n/a		5	336	13	123	1	241	1	182	1	197

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Towns																		
Ryley																		
Products of Agriculture	n/a		n/a		n/a		-	220	-	238	-	-	-	-	-	-	-	102
Products of Mines	n/a		n/a		n/a		-	-	-	3	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	1	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		8	-	8	-	-	-	-	-	-	-	19	-
Animals and Products	n/a		n/a		n/a		1	-	-	-	-	-	-	-	-	-	-	-
Total	n/a		n/a		n/a		9	220	9	241	16	151	19	168	31	127	19	102
Greater Towns																		
Willingdon																		
Products of Agriculture	n/a		n/a		2	299	n/a		1	337	-	218	-	351	-	259	-	267
Products of Mines	n/a		n/a		22	-	n/a		17	-	15	-	11	-	7	-	8	-
Products of Forests	n/a		n/a		-	-	n/a		-	-	4	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		64	-	n/a		60	1	54	1	58	1	55	2	50	4
Animals and Products	n/a		n/a		-	22	n/a		-	10	-	17	-	4	-	1	-	-
Total	n/a		n/a		88	321	n/a		78	348	73	236	69	356	62	262	58	271
Mundare																		
Products of Agriculture	n/a		n/a		n/a		-	279	-	328	-	-	-	-	-	-	11	196
Products of Mines	n/a		n/a		n/a		11	-	10	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		108	-	81	-	-	-	-	-	-	-	7	-
Total	n/a		n/a		n/a		119	279	91	328	41	304	33	290	28	233	18	196
Holden																		
Products of Agriculture	n/a		n/a		n/a		-	370	-	391	-	-	-	-	-	-	-	222
Products of Mines	n/a		n/a		n/a		-	-	-	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		5	-	-	-	-	-	-	-	-	-	-	-
Manufactures and Misc.	n/a		n/a		n/a		29	-	32	1	-	-	-	-	-	-	13	-
Animals and Products	n/a		n/a		n/a		1	-	-	-	-	-	-	-	-	-	-	-
Total	n/a		n/a		n/a		35	370	32	392	32	290	24	268	30	220	13	222

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (continued)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Tofield																		
Products of Agriculture	n/a		n/a		n/a		-	96	-	80	-	-	-	-	-	-	-	72
Products of Mines	n/a		n/a		n/a		4	-	1	-	-	-	-	-	-	-	-	-
Products of Forests	n/a		n/a		n/a		-	-	-	1	-	-	-	-	-	-	1	-
Manufactures and Misc.	n/a		n/a		n/a		51	-	31	-	-	-	-	-	-	-	15	-
Animals and Products	n/a		n/a		n/a		-	-	1	-	-	-	-	-	-	-	-	2
Total	n/a		n/a		n/a		55	96	33	81	14	64	25	98	20	56	16	74
Two Hills																		
Products of Agriculture	n/a		n/a		1	367	n/a		3	373	4	154	7	299	1	214	-	293
Products of Mines	n/a		n/a		17	149	n/a		66	-	70	2	98	5	99	1	51	66
Products of Forests	n/a		n/a		4	1	n/a		3	-	4	-	4	-	1	-	4	-
Manufactures and Misc.	n/a		n/a		115	654	n/a		100	12	85	10	81	13	87	2	86	212
Animals and Products	n/a		n/a		-	21	n/a		1	18	1	10	1	-	-	3	-	1
Total	n/a		n/a		137	1192	n/a		173	403	164	176	191	317	188	220	141	572
Vegreville (C.P.)																		
Products of Agriculture	n/a		n/a		n/a		8	210	9	215	-	-	-	-	-	-	8	209
Products of Mines	n/a		n/a		n/a		15	-	9	1	-	-	-	-	-	-	10	-
Products of Forests	n/a		n/a		n/a		2	-	2	-	-	-	-	-	-	-	5	-
Manufactures and Misc.	n/a		n/a		n/a		197	-	238	6	-	-	-	-	-	-	129	4
Animals and Products	n/a		n/a		n/a		1	13	-	-	-	-	-	-	-	-	-	1
Total	n/a		n/a		n/a		223	223	258	222	184	178	174	210	167	187	252	214
Vegreville (C.N.)																		
Products of Agriculture	-	146	-	225	-	186	-	197	-	214	-	130	-	170	1	117	-	126
Products of Mines	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Products of Forests	17	-	13	-	14	-	17	-	17	-	13	1	13	-	18	-	15	-
Manufactures and Misc.	173	2	183	1	269	2	185	-	183	-	61	-	50	-	47	-	54	-
Animals and Products	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Total	190	148	196	226	283	189	202	197	201	214	74	131	63	170	66	117	69	126

(continued)

TABLE 8. CARLOAD RAIL TRAFFIC AT SPECIFIC POINTS IN THE STUDY AREA, 1960-68 (concluded)

Delivery Point	1960		1961		1962		1963		1964		1965		1966		1967		1968	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Camrose (C.P.)																		
Products of Agriculture	n/a		n/a		n/a		28	105	23	93	-	-	-	-	-	-	52	155
Products of Mines	n/a		n/a		n/a		87	-	146	-	-	-	-	-	-	-	-	8
Products of Forests	n/a		n/a		n/a		4	-	4	-	-	-	-	-	-	-	9	-
Manufactures and Misc.	n/a		n/a		n/a		175	68	549	373	-	-	-	-	-	-	824	2088
Animals and Products	n/a		n/a		n/a		1	-	-	-	-	-	-	-	-	-	4	4
Total	n/a		n/a		n/a		295	173	722	466	602	977	223	472	467	1192	889	2255
Camrose (C.N.)																		
Products of Agriculture	n/a		n/a		46	263	n/a		42	294	51	214	24	240	78	247	26	175
Products of Mines	n/a		n/a		162	37	n/a		4	5	2	-	-	-	4	-	5	-
Products of Forests	n/a		n/a		69	6	n/a		31	1	43	-	19	-	21	-	15	-
Manufactures and Misc.	n/a		n/a		785	86	n/a		1311	1598	1050	848	301	269	656	1076	1046	2866
Animals and Products	n/a		n/a		6	-	n/a		-	-	1	-	-	-	-	1	-	2
Total	n/a		n/a		1068	392	n/a		1388	1898	1147	1062	344	509	759	1324	1092	3043

Products of Agriculture: all grains, seeds, hay and straw, etc.
 Products of Mines: coal, cement, brick, asphalt, lime, etc.
 Products of Forests: lumber, and all processed natural wood, plywood, shingles, posts, poles, etc.
 Manufactures and Miscellaneous: fertilizer, fuel oil, gasoline, scrap metal, etc.

n/a: means information not available

¹For those points with no build up of railway traffic, only totals were available (i.e. Dinant 1965)

Source: (1) Canadian National Railways, Analytical Services, Winnipeg.
 (2) Canadian Pacific Railways, Department of Research, Montreal.

Highway Transportation Services

The general availability of truck transportation in the area is good. Truck services are listed below by community.^{1/}

Armena: Art's Transfer, Highway (13)
Transfer.

Ohaton: Art's Transfer, Camrose Transfer, Highway (13)
Transfer.

Hay Lakes: Art's Transfer, C.N. Express, Grimshaw Trucking and
Distributing, Camrose Transfer, Highway (13)
Transfer.

Hairy Hill: C.P. Transport.

Bawlf: Art's Transfer, Camrose Transfer, Highway (13)
Transfer, C.P. Transport.

Ryley: C.N. Express, Good's Transport, Jack's Transport.

Willingdon: C.P. Transport.

Mundare: C.N. Express.

Holden: C.N. Express, Good's Transport.

Tofield: C.N. Express.

Two Hills: Boychuk's Transfer, C.P. Transport, Hlewka's Two Hills
Transfer.

Vegreville: C.N. Express, C.P. Transport, East Line Transfer,
Vegreville Transfer.

Camrose: Art's Transfer, C.P. Transport, C.N. Express, Gow Express
Lines, McMillen Transport, Camrose Transfer, Highway (13)
Transfer, Mackay's Transport, Lake's Cartage.

^{1/} Alberta Shippers Guide.

Soil Capability For Agriculture

The majority of the area is located in land that is considered to be fairly good to good arable^{1/}. Some of the best land is to be found around Warwick, Norma and north of Willingdon. This may be seen in the Soil Capability map enclosed in the back cover. The soils around these delivery points are called Class I and have no significant limitations in the use for crops.

The great proportion of soils in the area are Class II. The limitations of these soils are moderate and under good management can be expected to yield moderately high to high in productivity for a wide range of crops. For example, the soil just west of Camrose is classified 2_{s4w}^9 . This means that the proportion of soil classes 2 and 4 are 90 per cent 2 and 10 per cent 4. The subscripts s and w reflect the limitations of the soils. These are amply defined on the soils map under the heading "Sub-classes".

By following the Soil Capability map one may examine any particular area in the study to determine its soil classification and limitations.

The Soil Research Sub-Station of the Canada Department of Agriculture at Vegreville has recently published a pamphlet (No. 1391) entitled "Solonetzic Soils and their Management". Much of the land in the study area has soils of this kind. The pamphlet demonstrates that these soils respond very well to proper management, which includes applications of ammonium nitrate (33.5-0-0), ammonium sulfate (21-0-0) or urea (45-0-0), and deep plowing.

^{1/} Alberta Soil Survey, University of Alberta, Bulletin No. SS-Ex-4, January, 1963.

Sales of Farm Land in the Study Area, 1963-1967

In the five year period ending in 1967, there were 441 transactions involving the sale of farm real estate within the study area (see Table 9). The sales prices reflect the capability of the soils. The highest prices for land were recorded in areas described as either class 1 or those with a high proportion of class 2 soils. One should refer to the Soil Capability map for a description of these soils. The lowest prices were recorded in those soils described as class 4, 3 or with a lesser proportion of class 2 soil than the higher priced land.

Land prices in the area seem to have risen in the five year period which would conform to the general upward pressure on prices during that time. However, one cannot be sure that one is comparing soils of equal productivity, or lands of the same geographical features when examining the low, high and average prices over the five year period.

TABLE 9. REPRESENTATIVE FARM VALUES, BY SALES PRICE PER ACRE, 1963 TO 1967

Year	Number of Transactions	Total Number of Acres	Price per Acre		
			Low	High	Average
			\$	\$	\$
1963	91	24,581	20.70	112.50	60.17
1964	90	21,690	22.01	143.59	69.05
1965	112	24,735	15.63	150.00	68.80
1966	73	15,512	28.13	156.25	83.09
1967	75	19,241	28.99	143.75	84.78

Source: Farm Credit Corporation, Ottawa.

Temperature Extremes and Norms

The meteorological data for the study area are taken from four stations either within or near the area. Camrose and Vegreville are within the study area while Viking and Ranfurly are just a few miles to the east. The climate of the area is continental; characterized by relatively warm summers and cold winters. The mean summer temperature (May to September) is in the neighbourhood of 56°F. July is the warmest month averaging around 63°F (Table 10). The mean winter temperature (November to March) is 13°F. April and October average about 39°F^{1/}.

The killing frost-free period (above 29°F) averages about 115 days, varying from about 130 to 100 days; the frost-free period (above 32°F) averages about 90 days.

^{1/} Alberta Soil Survey, University of Alberta. Bulletin No. SS-EX-4, January, 1963.

TABLE 10. TEMPERATURE NORMALS AND EXTREMES FOR METEOROLOGICAL STATIONS NEAR THE STUDY AREA

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
CAMROSE													
Mean Daily Maximum ¹	13.6	19.4	31.3	50.1	63.7	68.7	75.4	72.2	63.2	51.8	33.0	21.0	47.0
Mean Daily Minimum ¹	-6.6	-3.4	8.3	26.4	38.4	45.0	49.8	46.6	37.9	27.0	13.9	1.8	23.8
Mean Daily Temperature ¹	3.5	8.0	19.8	38.3	51.1	56.9	62.6	59.4	50.6	39.4	23.5	11.4	35.4
Maximum Temperature ²	52	57	62	89	92	98	101	94	90	88	71	58	101
Minimum Temperature ²	-53	-58	-45	-26	11	27	33	21	3	-12	-32	-56	-58
RANFURLY													
Mean Daily Maximum ¹	12.7	18.1	29.3	49.4	64.4	69.2	75.6	72.3	62.3	50.9	30.6	19.2	46.2
Mean Daily Minimum ¹	-6.9	-3.1	8.5	26.6	38.2	44.6	49.9	46.8	38.6	28.6	13.4	0.9	23.8
Mean Daily Temperature ¹	2.9	7.5	18.9	38.0	51.3	56.9	62.8	59.6	50.5	39.8	22.0	10.1	35.0
Maximum Temperature ³	59	56	73	92	97	98	105	99	93	89	73	57	105
Minimum Temperature ³	-57	-60	-44	-26	6	22	25	24	6	-19	-41	-53	-60
VEGREVILLE⁵													
Mean Daily Maximum ³				50.6	64.2	69.4	76.5	72.9	64.8	53.0			
Mean Daily Minimum ³				27.8	38.6	44.0	49.9	46.1	39.0	28.7			
Mean Daily Temperature ³				39.2	51.4	56.7	63.2	59.5	51.9	40.9			102
Maximum Temperature ¹				90	94	98	102	100	90	86			
Minimum Temperature ¹				-12	10	22	36	30	15	-2			
VIKING													
Mean Daily Maximum ¹	12.0	17.4	28.4	49.1	63.3	69.3	76.4	73.4	63.0	51.6	30.8	18.5	46.1
Mean Daily Minimum ¹	-6.3	-3.1	8.6	26.8	37.4	44.3	49.3	45.8	37.8	27.5	13.5	1.6	23.6
Mean Daily Temperature ¹	2.9	7.2	18.5	38.0	50.4	56.8	62.9	59.6	50.4	39.6	22.2	10.1	34.9
Maximum Temperature ⁴	52	55	66	91	94	99	103	98	91	85	69	58	103
Minimum Temperature ⁴	-58	-69	-42	-24	10	26	30	24	5	-14	-37	-51	-69

¹Normals were computed directly from a period of record of 25 to 30 years within the period 1931-1960. In most cases the record existed over the full 30 years.

²The data for these normals were from the full ten-year period 1951 to 1960 adjusted to the standard normal period 1931 to 1960.

³These averages are based on the period of record of 10 to 24 years during the period 1931 to 1960. No adjustment factor has been used.

⁴These averages are based on the complete ten years of record from 1951-1960. No adjustment factor was used.

⁵Vegreville a summer station only.

Precipitation

The mean annual precipitation is from 15-18 inches (Table 11). About 75 per cent of the precipitation falls as rain. Summer rains are generally of the low intensity variety.^{1/}

^{1/} Alberta Soil Survey, University of Alberta. Bulletin No. SS-EX-4, January, 1963.

TABLE 11. MONTHLY AND ANNUAL AVERAGE PRECIPITATION FOR METEOROLOGICAL STATIONS NEAR THE STUDY AREA

Meteorological Station	January	February	March	April	May	June	July	August	September	October	November	December	Year
— inches —													
CAMROSE ¹													
Mean Rainfall	0.02	0.02	0.02	0.55	1.55	2.53	2.74	2.28	1.28	0.36	0.13	0.04	11.52
Mean Snowfall	7.1	5.2	6.6	4.4	0.3	0.0	0.0	0.0	0.1	3.5	5.3	5.5	38.0
Mean Total Precipitation ⁵	0.73	0.54	0.68	0.99	1.58	2.53	2.74	2.28	1.29	0.71	0.66	0.59	15.32
RANFURLY ¹													
Mean Rainfall	0.02	0.01	0.02	0.36	1.38	2.63	2.84	2.88	1.63	0.36	0.09	0.04	12.26
Mean Snowfall	7.8	5.9	8.0	6.1	1.3	0.0	0.0	0.0	0.9	4.4	8.1	8.2	50.7
Mean Total Precipitation ⁵	0.80	0.60	0.82	0.97	1.51	2.63	2.84	2.88	1.72	0.80	0.90	0.86	17.33
VEGREVILLE ^{2 3}													
Mean Rainfall				0.42	1.48	2.57	2.88	2.31	1.45	0.48			
Mean Snowfall				2.6	0.1	0.0	0.0	0.0	0.0	0.4			
Mean Total Precipitation ⁵				0.68	1.49	2.57	2.88	2.31	1.45	0.52			
VIKING ¹													
Mean Rainfall	0.02	T ⁴	0.01	0.49	1.27	2.72	2.75	2.47	1.49	0.43	0.11	0.02	11.78
Mean Snowfall	7.4	5.1	7.4	3.7	0.7	0.0	0.0	0.0	0.1	3.1	6.0	7.3	40.8
Mean Total Precipitation ⁵	0.76	0.51	0.75	0.86	1.34	2.72	2.75	2.47	1.50	0.74	0.71	0.75	15.86

¹Normals were computed directly from a period of Record of 25 to 30 years within the period 1931-60. In most cases the record existed over the full 30 years.

²These averages are based on the period of record of 10 to 24 years during the period 1931 to 1960. No adjustment factor has been used.

³Vegreville a summer station only.

⁴T (trace) — Less than 0.005 inches of precipitation.

⁵Total precipitation measured in inches of rain. Ten inches of snow equals one inch of rain.

Source: Canada Department of Transport, Meteorological Branch, Toronto.

Disposition of Grain Farm Acreage, Crop Years 1962-63 and 1966-67

The acreage devoted to various enterprises, according to the information provided by the farmers in the affidavits substantiating their requests for delivery permit books, is shown for the crop years 1962-63 and 1966-67 in Tables 12 and 13.

Total farm acreage declined by some 19,000 acres for the study area as a whole for the two crop years shown. Losses in acreage were general in the two smallest classifications of communities. This means losses in acreage tributary to the grain elevators in those communities. Dinant, which closed its elevator service in 1965, in essence lost 10,000 acres. The land is obviously located in the same place but is redistributed to alternate delivery points as producers selected another point to deliver grain. The largest losses as well as gains of acreage tributary to grain elevators took place in the greater towns. The acreages at Tofield and Mundare declined by some 8,000 and 6,000 acres respectively. Looking ahead to Table 21 one sees that there were also substantial declines in the number of permit holders at these two points between the two years. The largest increase in acreage took place at Camrose - an increase of about 10,000 acres.

Wheat was the predominant enterprise for the two years shown and increased by some 20,000 acres between the two crop years. No doubt the large sales of wheat to Russia and Communist China had a bearing on the increase. Oats was reduced by some 39,000 acres while barley increased by 30,000. Relative to the acreage of 1962-63 the interest in rapeseed was substantial - increasing by 13,000 acres. The reduction in summer fallow of 23,000 acres may indicate a lessened concern regarding moisture retention and perhaps a concomitant increase in reliance on spraying for weed control.

Changes in enterprises between the two crop years for any particular delivery point may be examined by comparing Tables 12 and 13.

TABLE 12. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
<i>Too Small to Classify</i>												
Dinant												
Acres	1,572	-	2,220	846	-	2,290	594	-	50	58	2,591	10,221
Per cent of Total	15.4	-	21.7	8.3	-	22.4	5.8	-	0.5	0.6	25.3	100.0
Fitzallen												
Acres	2,581	-	2,317	1,256	-	2,576	1,214	-	-	10	1,595	11,549
Per cent of Total	22.3	-	20.1	10.9	-	22.3	10.5	-	-	0.1	13.8	100.0
Shonts												
Acres	1,998	-	2,881	848	-	2,753	2,168	-	-	50	4,354	15,052
Per cent of Total	13.3	-	19.2	5.6	-	18.3	14.4	-	-	0.3	28.9	100.0
Bardo												
Acres	1,822	-	1,717	1,244	-	2,054	1,462	-	-	344	1,701	10,344
Per cent of Total	17.6	-	16.6	12.0	-	19.9	14.1	-	-	3.3	16.5	100.0
<i>Hamlets</i>												
Dodds												
Acres	1,326	-	4,136	2,259	-	3,861	1,277	-	-	20	4,427	17,306
Per cent of Total	7.7	-	23.9	13.0	-	22.3	7.4	-	-	0.1	25.6	100.0
Haight												
Acres	4,211	-	2,810	1,235	-	3,111	367	-	-	-	3,237	14,971
Per cent of Total	28.1	-	18.8	8.2	-	20.8	2.5	-	-	-	21.6	100.0
Kaleland												
Acres	3,302	-	2,564	455	-	2,746	1,090	-	-	180	2,287	12,624
Per cent of Total	26.2	-	20.3	3.6	-	21.8	8.6	-	-	1.4	18.1	100.0
Norma												
Acres	2,366	-	2,353	265	-	2,233	565	211	-	7	2,040	10,040
Per cent of Total	23.6	-	23.4	2.6	-	22.3	5.6	2.1	-	0.1	20.3	100.0
Inland												
Acres	12,750	-	8,085	5,138	-	8,969	3,470	-	-	101	7,643	46,156
Per cent of Total	27.6	-	17.5	11.1	-	19.5	7.5	-	-	0.2	16.6	100.0
Royal Park												
Acres	10,379	-	8,533	3,184	-	8,134	1,193	-	80	66	4,682	36,251
Per cent of Total	28.6	-	23.6	8.8	-	22.4	3.3	-	0.2	0.2	12.9	100.0

(continued)

TABLE 12. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63 (continued)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
Warwick Acres	13,982	-	12,517	2,655	-	10,679	3,341	289	52	70	10,414	53,999
Per cent of Total	25.9	-	23.2	4.9	-	19.8	6.2	0.5	0.1	0.1	19.3	100.0
Villages												
Armena Acres	3,479	15	6,374	4,124	120	6,502	3,493	-	8	141	7,478	31,734
Per cent of Total	11.0	0.1	20.1	13.0	0.4	20.5	11.0	-	0.0	0.4	23.5	100.0
Ohaton Acres	6,369	-	4,863	2,102	210	6,659	2,984	10	-	113	4,215	27,525
Per cent of Total	23.1	-	17.7	7.6	0.8	24.2	10.9	0.0	-	0.4	15.3	100.0
Kingman Acres	5,774	-	7,991	5,025	-	9,342	4,481	-	-	350	9,712	42,675
Per cent of Total	13.5	-	18.7	11.8	-	21.9	10.5	-	-	0.8	22.8	100.0
Round Hill Acres	10,862	-	6,465	3,507	140	12,060	3,398	-	-	265	12,461	49,158
Per cent of Total	22.1	-	13.2	7.1	0.3	24.5	6.9	-	-	0.5	25.4	100.0
Hay Lakes Acres	5,533	-	7,684	9,932	125	12,721	7,985	50	10	478	18,356	62,874
Per cent of Total	8.8	-	12.2	15.8	0.2	20.2	12.7	0.1	0.0	0.8	29.2	100.0
Lavoy Acres	20,112	-	16,631	2,811	121	17,302	5,235	-	160	714	21,329	84,415
Per cent of Total	23.8	-	19.7	3.3	0.1	20.5	6.2	-	0.2	0.9	25.3	100.0
Hairy Hill Acres	15,094	-	13,584	2,446	105	13,192	2,770	126	-	367	13,934	61,618
Per cent of Total	24.5	-	22.0	4.0	0.2	21.4	4.5	0.2	-	0.6	22.6	100.0
Bawlf Acres	19,603	30	11,932	3,979	141	18,988	4,767	17	-	892	13,457	73,806
Per cent of Total	26.6	0.0	16.2	5.4	0.2	25.7	6.5	0.0	-	1.2	18.2	100.0

(continued)

TABLE 12. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1962-63 (concluded)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
<i>Towns</i>												
Ryley												
Acres	15,776	-	16,177	7,316	170	14,846	6,830	-	100	215	25,571	87,001
Per cent of Total	18.1	-	18.6	8.4	0.2	17.1	7.9	-	0.1	0.2	29.4	100.0
<i>Greater Towns</i>												
Willingdon												
Acres	21,803	100	20,030	6,380	259	22,058	4,374	2,086	47	350	19,362	96,849
Per cent of Total	22.5	0.1	20.7	6.6	0.3	22.8	4.5	2.1	0.0	0.4	20.0	100.0
Mundare												
Acres	25,245	-	17,566	6,624	-	19,153	2,722	-	150	414	15,781	87,665
Per cent of Total	28.8	-	20.0	7.6	-	21.8	3.1	-	0.2	0.5	18.0	100.0
Holden												
Acres	33,221	-	19,718	5,902	115	24,344	5,815	30	10	475	32,433	122,063
Per cent of Total	27.2	-	16.2	4.8	0.1	19.9	4.8	0.0	0.0	0.4	26.6	100.0
Tofield												
Acres	4,949	-	14,594	5,334	21	9,644	14,475	-	103	852	28,910	78,882
Per cent of Total	6.3	-	18.5	6.8	0.0	12.2	18.4	-	0.1	1.1	36.6	100.0
Two Hills												
Acres	26,303	-	20,855	4,965	30	23,638	8,129	61	266	468	39,953	124,669
Per cent of Total	21.1	-	16.7	4.0	0.0	19.0	6.5	0.1	0.2	0.4	32.0	100.0
Vegreville												
Acres	24,160	35	22,946	6,168	15	22,043	8,580	80	455	1,638	16,153	102,273
Per cent of Total	23.6	0.0	22.4	6.0	0.0	21.6	8.4	0.1	0.5	1.6	15.8	100.0
Camrose												
Acres	19,670	88	20,411	15,852	296	26,235	12,629	35	185	321	22,382	118,104
Per cent of Total	16.7	0.1	17.3	13.4	0.2	22.2	10.7	0.0	0.2	0.3	18.9	100.0
<i>Study Area Total</i>												
Acres	314,243	268	277,954	111,852	1,868	308,133	115,408	2,995	1,676	8,959	346,458	1,489,814
Per cent of Total	21.1	0.0	18.7	7.5	0.1	20.7	7.7	0.2	0.1	0.6	23.3	100.0

Source: Canadian Wheat Board, Winnipeg.

TABLE 13. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
<i>Too Small to Classify</i>												
Dinant												
(Closed in 1965)												
Fitzallen												
Acres	2,047	-	1,337	772	-	1,616	1,033	-	365	-	838	8,008
Per cent of Total	25.6	-	16.7	9.6	-	20.2	12.9	-	4.5	-	10.5	100.0
Shonts												
Acres	1,706	-	2,352	843	-	2,217	1,596	-	130	179	2,319	11,342
Per cent of Total	15.0	-	20.7	7.4	-	19.6	14.1	-	1.2	1.6	20.4	100.0
Bardo												
Acres	1,765	-	2,025	1,590	-	2,281	2,251	-	-	-	1,826	11,738
Per cent of Total	15.0	-	17.3	13.5	-	19.4	19.2	-	-	-	15.6	100.0
<i>Hamlets</i>												
Dodds												
Acres	1,399	-	3,811	1,619	70	2,718	1,591	-	35	-	3,817	15,060
Per cent of Total	9.3	-	25.3	10.7	0.5	18.1	10.6	-	0.2	-	25.3	100.0
Haight												
Acres	3,984	-	2,003	1,402	-	2,793	531	-	-	-	2,769	13,482
Per cent of Total	29.6	-	14.9	10.4	-	20.7	3.9	-	-	-	20.5	100.0
Kaleland												
Acres	3,378	-	1,622	885	10	3,039	1,331	30	-	159	2,122	12,576
Per cent of Total	26.8	-	12.9	7.0	0.1	24.2	10.6	0.2	-	1.3	16.9	100.0
Norma												
Acres	2,445	-	2,031	798	20	2,001	1,000	97	-	-	1,764	10,156
Per cent of Total	24.1	-	20.0	7.9	0.2	19.7	9.8	0.9	-	-	17.4	100.0
Inland												
Acres	11,342	-	6,213	4,787	-	8,193	3,500	70	845	139	5,950	41,039
Per cent of Total	27.6	-	15.1	11.7	-	20.0	8.5	0.2	2.1	0.3	14.5	100.0
Royal Park												
Acres	12,036	-	6,068	2,594	-	7,417	1,533	120	97	50	4,736	34,651
Per cent of Total	34.7	-	17.5	7.5	-	21.4	4.4	0.4	0.3	0.1	13.7	100.0

(continued)

TABLE 13. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67 (continued)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Crops	Unimproved Land	Total
Warwick Acres	16,238	-	9,645	3,274	-	9,817	4,677	-	168	252	9,556	53,627
Per cent of Total	30.3	-	18.0	6.1	-	18.3	8.7	-	0.3	0.5	17.8	100.0
Villages												
Armena Acres	3,373	-	5,379	5,822	-	6,481	4,368	-	910	35	7,311	33,679
Per cent of Total	10.0	-	16.0	17.3	-	19.2	13.0	-	2.7	0.1	21.7	100.0
Ohaton Acres	6,020	-	4,633	3,301	155	6,235	2,607	-	73	75	3,984	27,083
Per cent of Total	22.2	-	17.1	12.2	0.6	23.0	9.6	-	0.3	0.3	14.7	100.0
Kingman Acres	5,845	-	7,702	5,656	-	8,173	5,790	-	50	205	8,189	41,610
Per cent of Total	14.1	-	18.5	13.6	-	19.6	13.9	-	0.1	0.5	19.7	100.0
Round Hill Acres	10,128	-	7,589	5,117	-	10,397	3,896	40	584	211	11,398	49,360
Per cent of Total	20.5	-	15.4	10.4	-	21.0	7.9	0.1	1.2	0.4	23.1	100.0
Hay Lakes Acres	4,577	5	6,956	10,878	7	10,340	8,892	-	540	246	15,035	57,476
Per cent of Total	8.0	0.0	12.1	18.9	0.0	18.0	15.5	-	0.9	0.4	26.2	100.0
Lavoy Acres	21,483	-	12,305	3,689	87	17,103	7,279	70	3,809	500	19,555	85,880
Per cent of Total	25.0	-	14.3	4.3	0.1	19.9	8.5	0.1	4.4	0.6	22.8	100.0
Hairy Hill Acres	14,738	-	11,469	3,651	-	11,757	3,306	-	451	630	12,185	58,187
Per cent of Total	25.3	-	19.7	6.3	-	20.2	5.7	-	0.8	1.1	20.9	100.0
Bawlf Acres	18,964	-	10,028	8,870	119	17,355	5,546	-	61	364	11,703	73,010
Per cent of Total	26.0	-	13.7	12.1	0.2	23.8	7.6	-	0.1	0.5	16.0	100.0

(continued)

TABLE 13. GRAIN FARM ACREAGE DEVOTED TO SPECIFIED USE, BY DELIVERY POINT, 1966-67 (concluded)

Delivery Point	Wheat	Durum	Oats	Barley	Rye	Summer Fallow	Forage Crops	Flaxseed	Rapeseed	Other Unimproved Crops Land	Total
Towns											
Ryley	16,071	-	17,289	8,310	80	14,926	10,152	30	736	587	92,068
Acres	17.5	-	18.8	9.0	0.1	16.2	11.0	0.0	0.8	0.6	100.0
Per cent of Total											
Greater Towns											
Willingdon	25,625	65	19,975	6,948	120	20,354	6,663	1,305	1,086	105	101,452
Acres	25.2	0.1	19.7	6.8	0.1	20.1	6.6	1.3	1.1	0.1	100.0
Per cent of Total											
Mundare	30,652	-	12,622	5,179	-	16,759	2,409	-	958	223	81,957
Acres	37.4	-	15.4	6.3	-	20.4	2.9	-	1.2	0.3	100.0
Per cent of Total											
Holden	32,296	-	16,507	9,424	40	24,317	7,409	-	652	329	121,217
Acres	26.6	-	13.6	7.8	0.0	20.1	6.1	-	0.5	0.3	100.0
Per cent of Total											
Tofield	6,638	-	13,145	4,353	20	8,551	15,433	-	75	665	70,332
Acres	9.4	-	18.7	6.2	0.0	12.2	21.9	-	0.1	1.0	100.0
Per cent of Total											
Two Hills	28,257	-	17,860	7,788	-	23,160	11,315	-	42	1,190	125,977
Acres	22.4	-	14.2	6.2	-	18.4	9.0	-	0.0	0.9	100.0
Per cent of Total											
Vegreville	30,003	-	20,037	10,347	-	21,599	9,798	-	2,658	597	111,252
Acres	27.0	-	18.0	9.3	-	19.4	8.8	-	2.4	0.5	100.0
Per cent of Total											
Camrose	22,123	-	18,298	24,202	225	25,567	14,356	170	350	375	128,249
Acres	17.2	-	14.3	18.9	0.2	19.9	11.2	0.1	0.3	0.3	100.0
Per cent of Total											
Study Area Total	333,133	70	238,901	142,099	953	285,166	138,262	1,932	14,675	7,116	1,470,468
Acres	22.7	0.0	16.2	9.7	0.1	19.4	9.4	0.1	1.0	0.5	100.0
Per cent of Total											

Source: Canadian Wheat Board, Winnipeg.

Changes in Farm Operation Contemplated in the Camrose - Vegreville Region
1966-72

In 1966 the Department of Energy, Mines and Resources conducted a marketing survey of grain producers in the Prairie Provinces. Data obtained from the questionnaire returned by producers in the Camrose - Vegreville study area are shown in Table 14. In the study area 27 per cent of the producers at 11 delivery points took part in the survey.

Forty-five per cent of the respondents felt that cultivation of crop land would be more intensive by 1972. This contrasts with only 16 per cent who indicated they would not intensify their cultivation practices (39 per cent gave no reply to the question). At most delivery points there was a greater proportion of "yes" over "no", response. Fitzallen and Ohaton had greater "no" responses.

The question with respect to either a reduction or increase in grain acreage were both not answered by over 50 per cent of the respondents. Those that answered were consistent however as 10 per cent answered "yes" and 30 per cent "no" to grain acreage reduction while 31 per cent answered "yes" and 15 per cent "no" to an increase in grain acreage.

With respect to an increase of forage crops the proportion of "yes" and "no" responses was about the same, 27 and 21 per cent respectively. Willingdon had the greatest proportion of "yes" response of those delivery points responding; 71 per cent indicating an increase in forage production. Bardo, on the other hand, had a 50 per cent negative response to increased forage production and none in favour.

The question with respect to increased use of fertilizer had the best response of all questions. That is, only 27 per cent of the producers gave no reply. Of the 73 per cent that replied 69 per cent indicated there would be an increase in the use of fertilizer while 4 per cent replied in the negative.

The question regarding enlargement of farm by renting or purchasing land was not answered by 51 per cent while 28 per cent indicated this was a possibility and 21 per cent replied in the negative. At Shonts none answered in the affirmative while 75 per cent replied there would be no enlargement of farm size. At Willingdon, on the other hand, 61 per cent anticipated an increase in farm size and 39 per cent replied in the negative.

The question with respect to increased amount of grain to be fed to livestock was unanswered by 55 per cent of the producers. Those that responded were 29 per cent affirmative and 16 per cent in the negative. Willingdon had the most positive reply to this question as all producers answered the question with a 77 per cent affirmative response.

Very few producers thought they might move their home to a nearby community but continue to operate their farm. Only 6 per cent answered "yes" to this proposal while 29 per cent replied negative and 65 per cent gave no response.

In 1966 the movement of wheat off farms, across the prairies, was at an all time high volume. Therefore those questions dealing with grains no doubt reflect the optimism of those times and should be tempered to reflect today's grains situation of world surpluses.

TABLE 14. CHANGES IN FARM OPERATION CONTEMPLATED BY GRAIN FARMERS IN THE STUDY AREA, 1966-1972

Delivery Point	More Intensive Cultivation of Crop Land	Reduction of Grain Acreage	Increase in Grain Acreage	Increase in Production of Crops	Increased Use of Fertilizer	Enlargement of Farm By Renting or Purchasing Land	Withdrawal From Farming For Retirement or Other Reasons	Increased Amount of Grain to be Fed to Livestock	Move Home to Nearby Village or Town—But Continue to Operate Present Farm	Percentage of Grain-Farm Operators Taking Part in Survey
— percent —										
<i>Too Small to Classify</i>										
<i>Fitzallen</i>										
Yes	17	17	17	17	50	17	0	17	0	26
No	50	0	33	0	17	0	17	0	17	
N.A.	33	83	50	83	33	83	83	83	83	
<i>Shonts</i>										
Yes	50	0	50	25	75	0	25	50	0	21
No	0	50	0	25	0	75	50	25	75	
N.A.	50	50	50	50	25	25	25	25	25	
<i>Bardo</i>										
Yes	62	0	0	0	81	31	19	13	6	46
No	19	56	44	50	6	44	31	37	50	
N.A.	19	44	56	50	13	25	50	50	44	
<i>Hamlets</i>										
<i>Haight</i>										
Yes	13	0	13	5	3	15	53	5	0	84
No	2	3	2	3	2	3	2	3	3	
N.A.	85	97	85	92	95	82	45	92	97	
<i>Inland</i>										
Yes	56	0	36	5	69	44	0	10	0	35
No	3	13	3	13	0	2	13	13	15	
N.A.	41	87	61	82	31	54	87	77	85	
<i>Villages</i>										
<i>Ohaton</i>										
Yes	14	7	29	0	57	14	22	22	0	25
No	22	14	7	14	7	14	14	14	29	
N.A.	64	79	64	86	36	72	64	64	71	
<i>Round Hill</i>										
Yes	18	17	33	17	100	0	0	17	0	5
No	17	0	0	0	0	0	0	0	100	
N.A.	65	83	67	83	0	100	100	83	0	

(continued)

TABLE 14. CHANGES IN FARM OPERATION CONTEMPLATED BY GRAIN FARMERS IN THE STUDY AREA, 1966-1972 (concluded)

Delivery Point	More Intensive Cultivation of Crop Land	Reduction of Grain Acreage	Increase In Grain Acreage	Increase In Production of Forage Crops	Increase Use of Fertilizer	Enlargement of Farm By Renting or Purchasing Land	Withdrawal From Farming For Retirement or Other Reasons	Increased Amount of Grain to be Fed to Livestock	Move Home to Nearby Village or Town-But Continue to Operate Present Farm	Percentage of Grain-Farm Operators Taking Part in Survey
- percent -										
Towns										
Ryley										60
Yes	35	11	38	32	86	23	14	39	9	
No	22	42	19	33	2	31	37	23	45	
N.A.	43	47	43	35	12	46	49	38	46	
Greater Towns										
Willington										10
Yes	77	7	61	71	100	61	26	77	13	
No	23	93	36	29	0	39	74	23	77	
N.A.	0	0	3	0	0	0	0	0	10	
Holden										18
Yes	52	44	39	28	59	33	22	37	7	
No	20	13	24	30	17	32	33	26	26	
N.A.	28	43	37	42	24	35	45	37	67	
Two Hills										27
Yes	61	14	16	36	74	26	1	16	4	
No	3	0	0	0	0	0	0	0	0	
N.A.	36	86	84	64	26	74	99	84	96	
Per cent of Total										27
Response										
Yes	45	10	31	27	69	28	17	29	6	
No	16	30	15	21	4	21	25	16	29	
N.A.	39	60	54	52	27	51	58	55	65	

Source: Prairie Farm Marketing Survey, Department of Energy, Mines and Resources, Ottawa.

Crop Yields In The Area

Table 15 shows a six year average yield of wheat, oats and barley in the study area for the years 1962 to 1967.

Mundare and Hay Lakes recorded the highest six year average yields of wheat in the area; 31 and 30 bushels per acre respectively. The yields at Mundare were more variable than Hay Lakes; ranging from 40 to 20 versus 35 to 27 bushels per acre respectively.

Some of the best soils in the area are located around Norma, Warwick and Willingdon. These are soils of Class 1 in the soil capability map^{1/} and are described as having no significant limitations in use for crops. Although the yields are not the highest of the area they have a low variability of yield over the time period shown. Since this particular soil class does not take up the entire land area around these particular delivery points the yields and the yield variability is not necessarily typical of this soil class.

The highest range of wheat yields were at Fitzallen and Mundare; both had a range of yield of 20 bushels per acre. The six-year average yield at both delivery points were very good however, at 26 and 31 bushels per acre respectively.

In the case of oats the highest average yields were recorded at Camrose, 53 bushels per acre. The highest yields for any particular year were at Ohaton and Hay Lakes which recorded yields of 70 bushels per acre.

In the case of barley the highest average yields were again achieved at Camrose 38 bushels per acre. The highest yields of barley for any particular year were at Camrose and Kaleland which had yields of 50 bushels per acre.

^{1/} See insert on back cover.

TABLE 15. SIX-YEAR AVERAGE YIELD OF WHEAT, OATS AND BARLEY BY DELIVERY POINT, 1962 TO 1967.

Delivery Point	Wheat				Oats				Barley			
	High	Low		6 Year Average	High	Low		6 Year Average	High	Low		6 Year Average
		Range	Range			Range	Range			Range	Range	
Too Small To Classify												
Dinant ¹	30	25	5	28	65	30	35	52	40	30	10	36
Fitzallen	35	15	20	26	55	30	25	41	40	20	20	30
Shonts	30	20	10	25	60	20	40	38	40	20	20	24
Bardo	30	22	8	27	57	20	37	43	34	23	11	25
Hamlets												
Dodds	30	20	10	25	65	30	35	49	40	20	20	32
Haight	35	23	12	28	40	28	12	35	25	12	13	19
Kaleland	28	18	10	24	55	25	30	42	50	20	30	34
Norma	23	18	5	20	50	30	20	41	25	20	5	24
Inland	35	22	13	26	50	35	15	43	35	25	10	29
Royal Park	35	20	15	27	50	30	20	40	35	20	15	29
Warwick ²	27	15	12	21	45	25	20	35	30	18	12	25
Villages												
Armena	28	20	8	25	60	40	20	47	35	20	15	31
Ohaton	40	25	15	28	70	30	40	43	35	15	20	23
Kingman	35	25	10	29	65	40	25	49	40	30	10	35
Round Hill	31	15	16	22	51	25	26	40	36	15	21	29
Hay Lakes	35	27	8	30	70	40	30	49	40	20	20	27
Lavoy	35	18	17	26	55	40	15	46	35	15	20	23
Hairy Hill	30	22	18	24	45	26	19	37	30	20	10	24
Bawlf	30	15	15	25	57	20	37	43	34	23	11	25
Towns												
Ryley	25	18	7	21	50	20	30	38	30	15	15	24
Greater Towns												
Willingdon	27	20	7	24	47	33	14	39	28	21	7	23
Mundare	40	20	20	31	60	30	30	48	40	20	20	29
Holden	28	15	13	21	50	30	20	38	35	20	15	28
Tofield	35	20	15	27	60	25	35	42	35	15	20	24
Two Hills	30	18	12	26	50	25	25	40	40	20	20	28
Vegreville	30	15	15	24	50	20	30	36	30	15	15	21
Camrose	35	25	10	27	65	35	30	53	50	30	20	38

¹ Records available for 1962-63 only.

² Records available for 1962-63 to 1966-67.

Source: Canadian Wheat Board, Winnipeg.

Protein Content

Protein content has become an integral term in the marketing of wheat in the past few months. With improved technology in the milling and baking industries it is becoming necessary in some markets to guarantee protein levels as well as grades of wheat. Many new flour mills and bakeries operate on a computerized system of adding inputs and the argument goes that protein content beyond certain narrow tolerance levels necessitate a re-programming of their operations and costly stoppages in production flows. Currently, the United States and Australia are guaranteeing minimum protein levels and Canada may have to follow suit to maintain our share of those specialized markets.

The top grades of Western Canadian Wheat have always commanded a premium in world markets because of the inherent quality of the protein contained in those wheats. Unfortunately a mere percentage designation tells nothing about the quality, which appears to be linked to genetic-ecological factors of the wheat production. Thus a 13.1 per cent protein wheat of a certain variety from a certain production area could be superior to a 13.9 per cent protein wheat of a different variety produced in another area.

The protein content of Canadian wheat is highly variable from region to region and from year to year. This is well illustrated in Table 16. For the study area as a whole the average protein content varied from 12.7 per cent in 1962 to 14.4 per cent in 1964. The range varied from 10.0 per cent to 16.8 per cent over the time period. For the province of Alberta the average varied from 12.8 per cent to 14.4 per cent while the range was from 8.1 per cent to 19.1 per cent.

TABLE 16. PROTEIN CONTENT OF HARD RED SPRING WHEAT, BY DELIVERY POINT, 1961 TO 1967.

Delivery Point	1961		1962		1963		1964		1965		1966		1967	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
<i>Too Small to Classify</i>														
Dinant	No Information	Available												
Fitzallen	No Information	Available												
Shonts	No Information	Available												
Bardo	No Information	Available												
<i>Hamlets</i>														
Dodds	No Information	Available												
Haight	15.1	14.3-15.5	12.9	11.6-14.5	14.5	14.4-14.9	13.6	11.7-15.9	12.7	11.6-14.3	12.4	10.7-14.2	n.a.	n.a.
Kaleland	No Information	Available												
Norma	No Information	Available												
Inland	14.4	13.0-15.4	13.5	13.1-14.3	13.2	11.7-14.1	15.0	14.5-15.4	13.1	12.0-14.2	n.a.	n.a.	14.5	13.3-15.9
Royal Park	No Information	Available												
Warwick	13.3	12.3-14.5	12.4	12.2-12.6	12.4	12.1-12.7	14.1	13.8-14.3	n.a.	n.a.	13.4	13.1-13.8	n.a.	n.a.
<i>Villages</i>														
Armena	15.9	15.5-16.5	n.a.	n.a.	13.6	11.6-14.8	14.6	12.8-15.8	14.3	11.6-16.6	n.a.	n.a.	13.6	12.5-15.2
Ohaton	No Information	Available												
Kingman	14.5	13.9-15.3	11.8	10.7-12.9	14.0	12.7-14.7	14.1	13.2-14.7	13.1	13.0-13.1	14.0	12.4-15.1	13.2	11.2-14.1
Round Hill	No Information	Available												
Hay Lakes	15.5	15.0-16.3	n.a.	n.a.	12.7	12.4-13.0	n.a.	n.a.	11.8	10.4-12.4	n.a.	n.a.	12.3	11.5-13.7
Lavoy	14.2	12.9-15.7	12.8	11.7-14.4	13.6	12.1-15.3	14.5	14.1-15.0	11.9	11.6-12.2	13.4	12.5-14.5	13.3	11.4-14.9
Hairy Hill	13.0	12.1-14.2	12.9	12.3-13.1	14.2	11.9-15.7	14.1	13.4-15.3	13.0	12.7-13.4	13.0	11.6-13.8	14.0	13.3-15.1
Bawlf	15.4	14.4-15.9	12.1	12.0-12.2	12.9	12.5-13.3	16.2	15.6-16.7	14.3	13.9-14.7	15.0	14.8-15.3	13.9	12.7-16.1
<i>Towns</i>														
Ryley	15.0	14.4-15.5	14.2	13.8-14.6	n.a.	n.a.	16.8	16.7-16.8	12.3	12.0-12.8	n.a.	n.a.	n.a.	n.a.
<i>Greater Towns</i>														
Willingdon	13.3	11.4-14.9	12.2	10.4-13.6	13.3	11.0-15.5	14.5	13.6-15.5	12.3	11.3-13.5	15.0	14.4-16.0	14.1	12.1-15.7
Mundare	12.8	11.0-15.2	12.6	10.8-14.4	12.6	12.5-12.7	13.7	12.2-15.2	13.0	12.3-13.7	n.a.	n.a.	14.0	13.5-14.5
Holden	14.6	13.1-15.9	11.6	11.5-11.6	13.5	12.8-14.6	14.4	13.5-15.2	13.3	12.2-14.5	13.8	12.5-15.2	n.a.	n.a.
Tofield	13.0	11.6-14.3	12.9	12.3-13.4	13.1	10.7-14.6	n.a.	n.a.	12.7	10.8-14.1	14.4	13.7-15.5	15.6	13.9-16.6
Two Hills	12.2	10.0-15.8	13.1	11.5-14.1	12.9	11.7-15.2	14.6	14.0-15.4	12.5	11.3-14.7	14.8	14.3-15.4	13.2	11.5-15.6
Vegreville	14.6	13.7-15.3	13.6	13.1-14.4	12.9	11.5-14.1	12.6	11.8-14.2	14.0	14.0-14.1	13.2	12.5-13.8	13.7	12.2-15.4
Camrose	16.2	15.7-16.7	13.0	11.8-14.3	14.3	13.7-15.5	14.8	14.7-14.9	12.6	11.5-13.6	12.3	11.8-12.9	13.6	12.8-15.8
Total Area ¹	14.0	10.0-16.7	12.7	10.4-14.6	13.4	10.7-15.7	14.4	11.8-16.8	12.8	10.4-16.6	13.7	10.7-16.0	13.8	11.2-16.6
Province of Alberta	14.0	8.9-19.1	13.8	8.4-18.6	13.8	9.7-18.4	14.4	8.1-19.1	12.8	8.7-18.4	12.8	8.4-16.5	13.4	8.8-17.8

¹Average weighted by number of samples
n.a. Not available

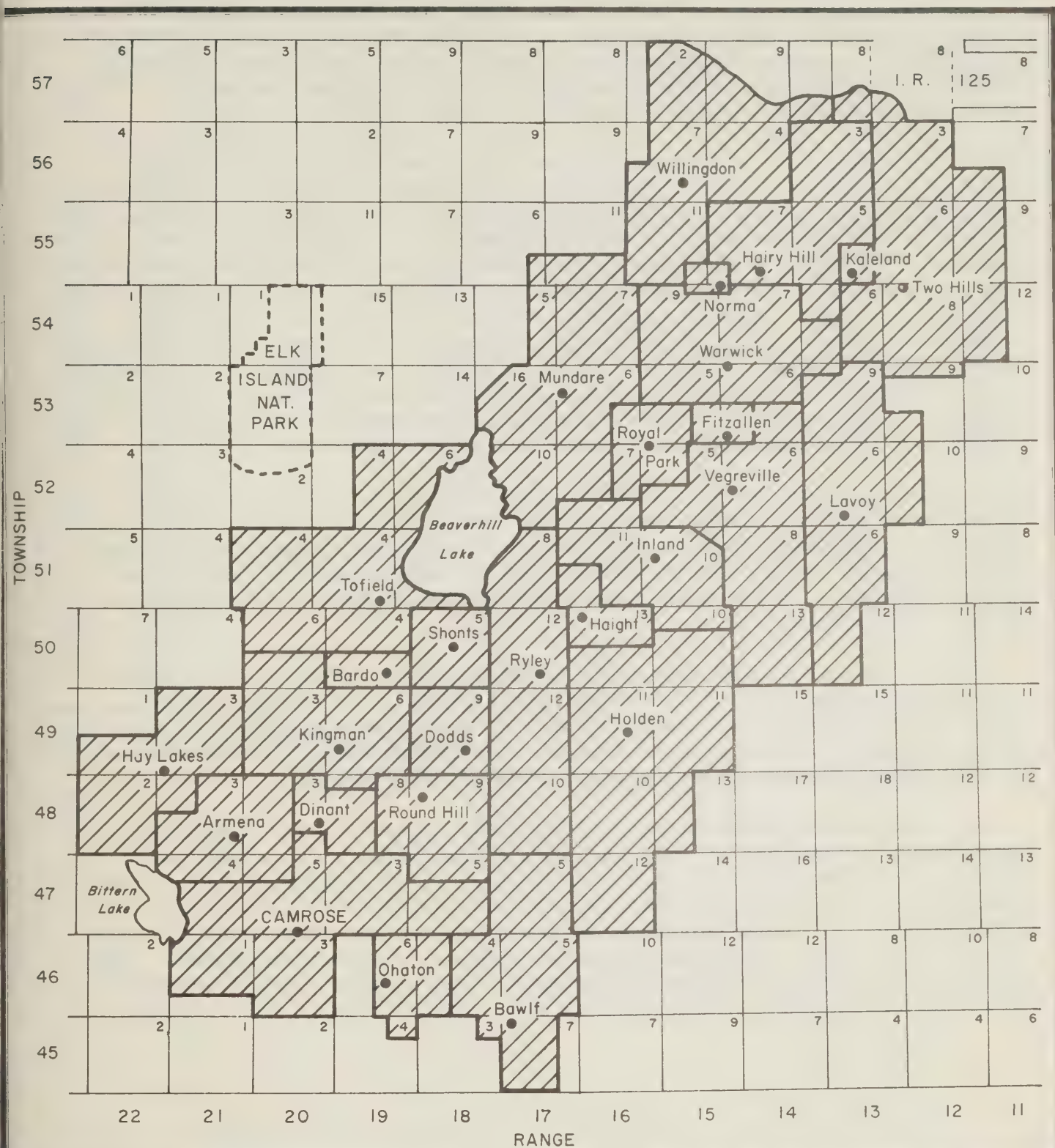
Source: Grain Research Laboratory, Board of Grain Commissioners, Winnipeg.

Prairie Farm Assistance Act Payments 1939-1967

The map following shows a rough outline of the land tributary to each of the delivery points in the study area. The figures represent the number of times PFAA payments were made to producers in the 29 year period from 1939-1967. Dinant, for example, has its tributary area in two townships at which payments were made 3 and 8 times respectively. This does not mean that all producers in those townships were paid this number of times but that some were.

Within the study area, the maximum number of times that payments were made in any one township to producers, in the 29 year period, was 13. These were made in townships in the tributary areas of the delivery points at Haight, Holden and Vegreville. By examining the map one will gain an insight into the frequency of crop failure within the study area.

PRAIRIE FARM ASSISTANCE ACT PAYMENTS 1939 - 1967



Farm Size and Land Tenure

The average size of farm in the study area was generally slightly larger in 1966-67 than in 1962-63, increasing from a mean of 342 acres to 373 acres. The total number of grain farms in the study area declined from 4,351 in 1962-63 to 3,939 in 1966-67. This follows the general trend for the prairies as a whole of fewer but larger farms.

Most delivery points in the study area had slight increases in average or mean farm size. Ohaton had the largest increase, from a mean of 423 acres in 1962-63 to 484 acres in 1966-67. The largest decrease in farm size occurred at Shonts, from 792 acres in 1962-63 to 597 acres in 1966-67. Part of the decrease is attributable to a substantial decline in the largest size of farm - from 2,240 acres in 1962-63 to 1,425 acres in 1966-67 (see Table 18). Because the average farm size can change substantially by a large shift at either end of the size scale, the median size group is perhaps a better indicator of farm size changes. The median size is that which has half the number of farms smaller than it and half larger. In this report, the farms have been grouped in 100 acre intervals and the group is denoted by the mid-point of its interval.

The greatest decreases in the number of farms were in the groups 301-400 and 101-200 acres where decreases of 279 and 214 were reported between the crop years 1962-63 and 1966-67. Decreases in numbers of farms are general in the groups 101-200 to 301-400 acres. Beyond this latter group, increases in the numbers of farms become prevalent over the time period shown (Table 17).

In the study area only three delivery points changed their median size of farm (Table 18). Dodds declined from 450 to 350 acres while Mundare and Willingdon increased from 150 to 250 and 250 to 350 acres respectively. For the area as a whole, the median size remained constant at 350 acres, between the crop years 1962-63 and 1966-67.

The general trend between 1962-63 and 1966-67 is for a greater proportion of the land to be owned rather than rented, by the operator (Table 19). For the study area as a whole, the proportion of owned land increased from 78.3 per cent in 1962-63 to 81.9 per cent in 1966-67. Some reasons for increasing land ownership may be the good sales of grain during this period and producers expectations of rising land values. The size of the elevator service centre appears to have no significant effect upon the distribution of the land between ownership and a rental basis.

TABLE 17. DISTRIBUTION OF GRAIN FARM SIZES IN THE STUDY AREA, CROP YEARS 1962-63 AND 1966-67

Size Group (acres)	1962-63		1966-67	
	Number of farms	Per cent of Total	Number of farms	Per cent of Total
1 - 100	67	1.5	72	1.8
101 - 200	1206	27.7	992	25.2
201 - 300	405	9.3	323	8.2
301 - 400	1548	35.6	1269	32.2
401 - 500	546	12.6	574	14.6
501 - 600	113	2.6	121	3.1
601 - 700	262	6.0	294	7.5
701 - 800	95	2.1	131	3.4
801 - 900	21	0.5	28	0.7
901 - 1,000	42	1.0	56	1.4
1,001 - 1,100	8	0.2	13	0.3
1,101 - 1,200	12	0.3	36	0.9
1,201 - 1,300	6	0.1	9	0.2
1,301 - 1,400	4	0.1	7	0.2
1,401 - 1,500	5	0.1	6	0.2
1,501 - 1,600	2	0.1	1	-
1,601 - 1,700	3	0.1	-	-
1,701 - 1,800	1	-	1	-
1,801 - 1,900	1	-	-	-
1,901 - 2,000	-	-	1	-
2,001 and over	4	0.1	5	0.1
Study Area Total	4351	100.0	3939	100.0

Source: The Canadian Wheat Board, Winnipeg.

TABLE 18. AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67

	1962-63	1966-67
<i>TOO SMALL TO CLASSIFY</i>		
Dinant		
Number of farms	34	(closed in 1965)
Mean size	301 acres	
Maximum size	636 acres	
Minimum size	67 acres	
Median size group	350 acres	
Modal size group	350 acres	
Fitzallen		
Number of farms	33	23
Mean size	350 acres	348 acres
Maximum size	958 acres	958 acres
Minimum size	154 acres	15 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Shonts		
Number of farms	19	19
Mean size	792 acres	597 acres
Maximum size	2,240 acres	1,425 acres
Minimum size	156 acres	320 acres
Median size group	450 acres	450 acres
Modal size group	450 acres	350 acres
Bardo		
Number of farms	35	35
Mean size	296 acres	335 acres
Maximum size	640 acres	798 acres
Minimum size	150 acres	150 acres
Median size group	350 acres	350 acres
Modal size group	150 acres	350 acres
	and 350	
<i>HAMLETS</i>		
Dodds		
Number of farms	37	34
Mean size	468 acres	443 acres
Maximum size	1,120 acres	1,360 acres
Minimum size	80 acres	80 acres
Median size group	450 acres	350 acres
Modal size group	450 acres	350 acres
Haight		
Number of farms	59	48
Mean size	254 acres	281 acres

(continued)

TABLE 18. AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67 (continued)

	1962-63	1966-67
Maximum size	640 acres	482 acres
Minimum size	80 acres	120 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Kaleland		
Number of farms	44	41
Mean size	287 acres	306 acres
Maximum size	880 acres	1,200 acres
Minimum size	44 acres	94 acres
Median size group	250 acres	250 acres
Modal size group	150 acres	150 acres
Norma		
Number of farms	31	29
Mean size	324 acres	350 acres
Maximum size	640 acres	650 acres
Minimum size	148 acres	111 acres
Median size group	350 acres	350 acres
Modal size group	150 acres	350 acres
Inland		
Number of farms	138	113
Mean size	335 acres	363 acres
Maximum size	960 acres	1,340 acres
Minimum size	80 acres	80 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Royal Park		
Number of farms	122	115
Mean size	297 acres	301 acres
Maximum size	1,040 acres	1,470 acres
Minimum size	80 acres	80 acres
Median size group	250 acres	250 acres
Modal size group	350 acres	150 acres
Warwick		
Number of farms	181	163
Mean size	298 acres	329 acres
Maximum size	800 acres	1,040 acres
Minimum size	146 acres	40 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	150 acres

(continued)

TABLE 18. AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67 (continued)

	1962-63	1966-67
VILLAGES		
Armena		
Number of farms	100	99
Mean size	317 acres	340 acres
Maximum size	1,285 acres	975 acres
Minimum size	85 acres	58 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Ohaton		
Number of farms	65	56
Mean size	423 acres	484 acres
Maximum size	1,515 acres	1,515 acres
Minimum size	149 acres	145 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Kingman		
Number of farms	131	114
Mean size	326 acres	365 acres
Maximum size	950 acres	1,102 acres
Minimum size	57 acres	153 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Round Hill		
Number of farms	130	130
Mean size	378 acres	380 acres
Maximum size	960 acres	960 acres
Minimum size	80 acres	80 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Hay Lakes		
Number of farms	221	196
Mean size	285 acres	293 acres
Maximum size	859 acres	859 acres
Minimum size	7 acres	50 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Lavoy		
Number of farms	230	220
Mean size	367 acres	390 acres
Maximum size	1,600 acres	1,760 acres

(continued)

TABLE 18. AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67 (continued)

	1962-63	1966-67
Minimum size	112 acres	40 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Hairy Hill		
Number of farms	205	187
Mean size	301 acres	311 acres
Maximum size	1,455 acres	880 acres
Minimum size	80 acres	80 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	150 acres
Bawlf		
Number of farms	180	172
Mean size	410 acres	425 acres
Maximum size	960 acres	1,200 acres
Minimum size	155 acres	108 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
TOWNS		
Ryley		
Number of farms	217	210
Mean size	401 acres	438 acres
Maximum size	1,440 acres	1,440 acres
Minimum size	155 acres	80 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
GREATER TOWNS		
Willingdon		
Number of farms	333	304
Mean size	291 acres	334 acres
Maximum size	851 acres	1,114 acres
Minimum size	62 acres	14 acres
Median size group	250 acres	350 acres
Modal size group	150 acres	350 acres
Mundare		
Number of farms	315	280
Mean size	278 acres	292 acres
Maximum size	1,379 acres	1,379 acres
Minimum size	80 acres	76 acres
Median size group	150 acres	250 acres
Modal size group	150 acres	150 acres

(continued)

TABLE 18. AVERAGE ACREAGE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67 (concluded)

	1962-63	1966-67
Holden		
Number of farms	334	300
Mean size	366 acres	404 acres
Maximum size	1,440 acres	2,080 acres
Minimum size	49 acres	52 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Tofield		
Number of farms	212	173
Mean size	372 acres	407 acres
Maximum size	2,206 acres	2,206 acres
Minimum size	118 acres	120 acres
Median size group	350 acres	350 acres
Modal size group	150 acres	250 acres
Two Hills		
Number of farms	367	322
Mean size	340 acres	391 acres
Maximum size	2,660 acres	1,318 acres
Minimum size	22 acres	22 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Vegreville		
Number of farms	291	273
Mean size	352 acres	408 acres
Maximum size	1,760 acres	2,700 acres
Minimum size	10 acres	20 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Camrose		
Number of farms	280	283
Mean size	422 acres	453 acres
Maximum size	4,521 acres	4,894 acres
Minimum size	9 acres	9 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres
Study Area Total		
Number of farms	4,351	3,939
Mean size	342 acres	373 acres
Maximum size	4,521 acres	4,894 acres
Minimum size	7 acres	9 acres
Median size group	350 acres	350 acres
Modal size group	350 acres	350 acres

Source: Canadian Wheat Board, Winnipeg.

TABLE 19. LAND TENURE OF GRAIN FARMS IN THE STUDY AREA, 1962-63 AND 1966-67.

Delivery Point	Per Cent Owned		Per Cent Rented	
	1962-63	1966-67	1962-63	1966-67
Too Small To Classify				
Dinant	85.9	closed	14.1	closed
Fitzallen	84.9	95.0	15.1	5.0
Shonts	47.6	66.3	52.4	33.7
Bardo	79.6	82.3	20.4	17.7
Hamlets				
Dodds	57.7	69.4	42.3	30.6
Haight	79.7	77.7	20.3	22.3
Kaleland	82.0	84.0	18.0	16.0
Norma	70.4	80.9	29.6	19.1
Inland	83.7	87.4	16.3	12.6
Royal Park	76.4	76.6	23.6	23.4
Warwick	79.1	79.9	20.9	20.1
Villages				
Armena	80.2	82.2	19.8	17.8
Ohaton	77.1	83.0	22.9	17.0
Kingman	77.7	83.9	22.3	16.1
Round Hill	73.6	81.4	26.4	18.6
Hay Lakes	82.0	83.6	18.0	16.4
Lavoy	81.4	85.7	18.6	14.3
Hairy Hill	77.9	82.1	22.1	17.9
Bawlf	78.6	83.2	21.4	16.8
Towns				
Ryley	74.0	79.3	26.0	20.7
Greater Towns				
Willingdon	79.7	83.1	20.3	16.9
Mundare	82.5	82.2	17.5	17.8
Holden	78.2	80.6	21.8	19.4
Tofield	79.1	82.3	20.9	17.7
Two Hills	78.9	81.8	21.1	18.2
Vegreville	81.6	82.6	18.4	17.4
Camrose	75.1	81.4	24.9	18.6
Study Area Total	78.3	81.9	21.7	18.1

Source: The Canadian Wheat Board, Winnipeg.

Marketing of Grain in the Study Area

Grain producers deliver to a particular point for several reasons. No doubt, the convenience of a close point is a very important factor in their decision. A recent survey of grain producers by the Geographical Branch of the Department of Energy, Mines and Resources tends to point out the importance of other factors as well (Table 20). The response to the questionnaire for the eleven points shown was 27 per cent, ranging from a low of 5 per cent at Round Hill to a high of 84 per cent at Haight.

For the producers responding the most important factor in the selection of a delivery point is shortest hauling distance where 74 per cent replied in the affirmative. The factors "good shopping facilities" and "banking, business etc.," while low in relative importance to the other factors, are highly influenced by the size of the delivery point. For both factors, as the size of the delivery point increases, (with respect to services), the importance of these factors increases. This is a result of facilities existing in the larger communities but not in the smaller. That the services offered by various points is important is displayed in the average length of haul to various delivery points. Table 31 shows that the larger points are able to attract more patronage for grain deliveries as well as from farther distances, than are smaller points.

TABLE 20. FACTORS GOVERNING GRAIN FARM OPERATORS' CHOICE OF DELIVERY POINT, 1966.

Delivery Point	Best Road Access	Preference For Elevator Company	Shortest Hauling Distance	Good Shopping Facilities	Banking Business Etc.	Other Reasons	Percent of Farm Operators Replying To Questionnaire
- per cent of total replies in affirmative -							
Too Small To Classify							
Fitzallen	17	67	84	0	0	0	26
Shonts	50	100	100	0	25	0	21
Bardo	14	34	34	0	0	0	46
Hamlets							
Haight Inland	2	98	78	2	2	0	84
	33	18	92	0	0	0	35
Villages							
Ohaton	21	86	71	0	0	0	25
Round Hill	17	84	100	0	0	0	5
Towns							
Ryley	36	51	70	34	51	1	60
Greater Towns							
Willingdon	68	94	48	29	81	0	10
Holden	76	40	89	53	72	0	18
Two Hills	61	100	64	97	97	0	27
Total Area	43	66	74	37	49	0	27

Source: Prairie Farm Marketing Survey, Geographical Branch, Department of Energy, Mines and Resources, 1966.

Delivery Permit Books Issued

The number of permit holders in the study area decreased from 4,351 in 1962-63 to 3,797 in 1967-68 (Table 21). Losses were general to most delivery points, but proportionally higher to the smaller points than the larger. The only point to increase its patronage over the years shown was Ryley; an increase of 8, from 217 to 225. The largest proportional decreases were at Haight and Fitzallen; 61 and 58 per cent decline respectively. Coincidentally both Haight and Fitzallen were closed in 1969.

TABLE 21. DELIVERY PERMIT BOOKS ISSUED, BY DELIVERY POINT, 1962-63 TO 1967-68.

Delivery Point	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Too Small To Classify						
Dinant	34	27	24	-	-	-
Fitzallen	33	28	25	23	23	14
Shonts	26	27	23	25	19	-
Bardo	35	38	38	37	35	33
Hamlets						
Dodds	37	36	35	33	34	31
Haight	59	59	56	52	48	23
Kaleland	44	44	42	42	41	37
Norma	31	29	30	29	29	26
Inland	138	130	123	121	113	98
Royal Park	122	118	119	119	115	118
Warwick	181	179	172	171	163	145
Villages						
Armena	100	102	104	107	99	95
Ohaton	65	67	60	61	56	52
Kingman	131	130	121	117	114	106
Round Hill	130	136	136	129	130	129
Hay Lakes	221	216	209	210	196	191
Lavoy	230	228	229	217	220	211
Hairy Hill	205	204	199	188	187	187
Bawlf	180	181	173	176	172	165
Towns						
Ryley	217	216	216	216	210	225
Greater Towns						
Willingdon	333	324	320	315	304	294
Mundare	315	305	295	288	280	267
Holden	334	331	323	312	300	295
Tofield	212	197	199	182	173	167
Two Hills	367	362	351	339	322	328
Vegreville	291	285	292	286	273	287
Camrose	280	280	291	287	283	273
Study Area Total	4351	4279	4205	4082	3939	3797

Source: The Canadian Wheat Board, Winnipeg.

Initial Payments

Under the Canadian Wheat Board marketing system, producers are paid an initial payment upon delivery of their grain to the grain elevators. In the study area the initial payment for all grades of wheat is based on set values in store Vancouver, less the freight cost from the delivery point to Vancouver and less the country elevator handling charge. Should it be necessary for wheat to be moved from the delivery points in the study area to the Lakehead, the producers would be charged the Vancouver rate and the appropriate pool account would be charged with the difference due the railways for the extra haul. Tables 22 and 23 shows the net initial payments at each point for selected grades of wheat, for the crop years 1968-69 and 1969-70 respectively.

For the other two Board grains, oats and barley, the initial payment for all grades is based on set values in store the Lakehead, less the freight rate from the delivery point to Fort William-Port Arthur, and less the country elevator handling charges. As will be noted from a perusal of Tables 22 and 23, the freight rate for all points in the study area (with the exception of Bawlf) is 26¢ per cwt. Bawlf has a 25¢ per cwt. rate.

The range of freight rates for wheat (Pacific Coast) in the area is from 21 to 24 cents. For initial payment purposes these are the rate zones used when determining the "street price" for wheat. It is interesting to note the effect of a freight rate difference between two adjacent delivery points. The Vancouver freight rates at Norma and Warwick are 24 cents and 22 cents per hundredweight respectively. Consequently the initial payment level is higher at Warwick than at Norma. The producers in these service areas evidently are aware of the situation, as an examination of the map (Fig. 1) will disclose that several producers choose the longer haul to Warwick rather than to Norma - in order to benefit from the higher initial payments there on wheat. It may be possible for certain other producers who currently deliver to Norma to take advantage of the price situation. However, this would depend on their relative location and they would have to weigh the added transportation costs of trucking against the increased return for delivering to a point in a lower freight rate zone. The other important consideration is that this applies only to wheat. There is no differential on oats or barley.

The difference between the price levels shown in Table 22 and those in Table 23 is the result of decreases in the initial payment levels, basis in store the terminal elevators at Vancouver (for wheat) and at Fort William - Port Arthur (for oats and barley).

TABLE 22. CANADIAN WHEAT BOARD NET INITIAL PAYMENTS TO PRODUCERS ("STREET PRICES"), CROP YEAR, 1968-69.

Delivery Point	Grain Freight Rates ¹		Wheat					No. 1 Feed Oats	No. 2 C.W. Oats	No. 3 C.W. 6 Row Barley	No. 1 Feed Barley
	Pacific Export	Lakehead ²	No. 1 Northern	No. 2 Northern	No. 4 Northern						
			and	and	and						
			No. 1 C.W.A.D.	No. 2 C.W.A.D.	No. 4 C.W.A.D.						
			— dollars per bushel —								
Too Small to Classify											
Fitzallen	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Shonts	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Bardo	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Hamlets											
Dodds	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Haight	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Kaleland	24	26	1.50	1.46	1.35		0.51 7/8	0.46 7/8	0.88	0.79	
Norma	24	26	1.50	1.46	1.35		0.51 7/8	0.46 7/8	0.88	0.79	
Inland	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Royal Park	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Warwick	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Villages											
Armena	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Ohaton	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Kingman	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Round Hill	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Hay Lakes	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Lavoy	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Hairy Hill	24	26	1.50	1.46	1.35		0.51 7/8	0.46 7/8	0.88	0.79	
Bawlf	22	25	1.51 1/4	1.47 1/4	1.36 1/4		0.52 1/4	0.47 1/4	0.88 1/2	0.79 1/2	
Towns											
Ryley	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Greater Towns											
Willingdon	24	26	1.50	1.46	1.35		0.51 7/8	0.46 7/8	0.88	0.79	
Mundare	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Holden	22	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Tofield	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	
Two Hills	24	26	1.50	1.46	1.35		0.51 7/8	0.46 7/8	0.88	0.79	
Vegreville	22	26	1.51 1/4	1.47 1/4	1.36 1/4		0.51 7/8	0.46 7/8	0.88	0.79	
Camrose	21	26	1.51 3/4	1.47 3/4	1.36 3/4		0.51 7/8	0.46 7/8	0.88	0.79	

¹Flaxseed and Rapeseed 1 1/2 cents per hundredweight higher.²Oats and Barley prices quoted Lakehead only.

Source: Canadian Wheat Board, Winnipeg.

TABLE 23. CANADIAN WHEAT BOARD NET INITIAL PAYMENTS TO PRODUCERS ("STREET PRICES"), CROP YEAR, 1969-70

Delivery Point	Grain Freight Rates ¹		Wheat					No. 1 Feed Oats	No. 2 C.W. Oats	No. 3 C.W. 6 Row Barley	No. 1 Feed Barley
	Pacific Export	Lakehead ²	No. 1 Northern and		No. 2 Northern and		No. 4 Northern and				
			No. 1 C.W.A.D.	No. 2 C.W.A.D.	No. 3 C.W.A.D.	No. 4 C.W.A.D.					
— ¢/cwt —											
Too Small to Classify											
Fitzallen	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Shonts	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Bardo	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Hamlets											
Dodds	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Haight	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Kaleland	24	26	1.29 3/4	1.25 3/4	1.12 3/4			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Norma	24	26	1.29 3/4	1.25 3/4	1.12 3/4			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Inland	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Royal Park	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Warwick	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Villages											
Armena	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Ohaton	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Kingman	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Round Hill	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Hay Lakes	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Lavoy	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Hairy Hill	24	26	1.29 3/4	1.25 3/4	1.12 3/4			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Bawlf	22	25	1.31	1.27	1.14			.42	.47	.73 1/4	.63 1/4
Towns											
Ryley	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Greater Towns											
Willingdon	24	26	1.29 3/4	1.25 3/4	1.12 3/4			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Mundare	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Holden	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Tofield	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Two Hills	24	26	1.29 3/4	1.25 3/4	1.12 3/4			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Vegreville	22	26	1.31	1.27	1.14			.41 5/8	.46 5/8	.72 3/4	.62 3/4
Camrose	21	26	1.31 1/2	1.27 1/2	1.14 1/2			.41 5/8	.46 5/8	.72 3/4	.62 3/4

¹Flaxseed and Rapeseed 1 1/2 cents per hundredweight higher.
²Oats and Barley quoted Lakehead only.

Source: Canadian Wheat Board, Winnipeg.

Elevator Capacity

The number of grain elevators and the storage capacity at any particular delivery point depicts the importance of that point as a grain collection and distribution centre. The number of elevators at a point is a rough approximation also of the degree of competition at a particular point. At points where there are two or more elevators one finds that generally more than one grain elevator company is represented. The number of grain elevators and the capacity of any particular point is shown in Table 24. The only point to increase its number of grain elevators was Camrose; from 4 in 1962-63 to 5 in 1968-69. The capacity of Camrose increased by about 100,000 bushels. The number of elevators declined by one at Hairy Hill. The largest increase in capacity took place at Ryley; an increase of 140,000 bushels.

TABLE 24. NUMBER AND CAPACITY OF LICENSED COUNTRY ELEVATORS AT SPECIFIED GRAIN DELIVERY POINTS, 1962-63 AND 1968-69

Delivery Point	Number of Elevators		Storage Capacity	
	1962-63	1968-69	1962-63	1968-69
Too Small to Classify	- number -		- '000 bushels -	
Dinant	2	Closed	56	Closed
Fitzallen	1	1	71	71
Shonts	2	1	80	30
Bardo	1	1	42	72
Hamlets				
Dodds	2	2	113	105
Haight	2	2	51	51
Kaleland	2	2	62	62
Norma	2	2	60	60
Inland	3	3	218	218
Royal Park	4	4	236	295
Warwick	4	4	263	263
Villages				
Armena	3	3	111	111
Ohaton	2	2	159	159
Kingman	3	3	193	193
Round Hill	4	4	195	195
Hay Lakes	4	4	155	155
Lavoy	5	5	379	439
Hairy Hill	6	5	335	277
Bawlf	4	4	351	443
Towns				
Ryley	3	3	307	447
Greater Towns				
Willingdon	6	6	389	502
Mundare	7	7	608	608
Holden	5	5	479	534
Tofield	3	3	209	209
Two Hills	6	6	423	461
Vegreville	5	5	493	544
Camrose	4	5	372	480

Source: Board of Grain Commissioners, Winnipeg.

Rechiepts of Grain

The relative importance of the various delivery points, as grain collection and distribution centres is also displayed in Table 25. Generally speaking the largest communities attract the greatest volume of business. Over the time period shown Vegreville has received the most grain. Only Vegreville and Camrose have received over a million bushels of grain in one year; this being in 1962-63. At most points in the study area the volume of grain going through the country elevator system is relatively small in comparison to the storage capacity. This is pointed out in Table 36 which shows the through-put ratios, or the ratio of grain handlings to storage capacity. Looking at the ratios in Table 36 under the first two columns one sees that the majority of points do not receive enough grain to turn over the total storage space twice per year.

TABLE 25. RECEIPTS OF GRAIN AT LICENSED ELEVATORS AT SPECIFIED DELIVERY POINTS, 1960-61 TO 1967-68

Delivery Point	1960-61 ¹	1961-62 ¹	1962-63 ¹	1963-64	1964-65	1965-66	1966-67	1967-68
Too Small to Classify								
Dinant	61,358	91,576	77,240	60,706	45,788	30	Closed	Closed
Fitzallen	74,064	120,401	99,171	88,647	60,366	64,296	47,457	23,025
Shonts	71,764	73,669	106,356	79,046	46,235	60,773	37,783	Closed
Bardo	60,060	69,323	78,829	63,980	52,642	47,053	51,013	49,706
Hamlets								
Dodds	102,635	96,956	122,491	102,261	70,533	90,763	82,065	56,380
Haight	74,657	94,349	99,621	102,988	76,065	84,887	63,832	Closed
Kateland	76,509	116,425	89,544	86,684	77,020	69,343	67,684	71,761
Norma	55,488	70,844	54,165	41,690	47,944	35,876	35,897	50,929
Inland	281,280	388,316	374,856	362,019	255,791	265,884	215,527	207,633
Royal Park	250,885	383,330	303,687	280,648	272,067	247,934	249,666	236,260
Warwick	329,561	446,252	410,822	370,519	330,584	334,911	268,735	282,457
Villages								
Armena	173,633	181,575	271,943	214,485	182,635	199,171	182,999	150,851
Ohaton	165,581	137,829	251,504	234,570	163,270	186,487	204,547	153,131
Kingman	200,437	242,605	299,762	247,800	171,098	172,342	196,770	170,416
Round Hill	260,377	238,707	264,655	339,396	225,503	273,468	279,975	207,859
Hay Lakes	173,663	212,807	241,597	277,541	247,950	221,547	253,805	200,744
Lavoy	473,553	652,730	663,557	595,079	448,982	496,508	385,661	492,936
Hairy Hill	368,264	506,264	400,844	358,689	349,912	353,238	294,662	322,183
Bawlf	406,715	422,479	758,412	599,621	434,544	527,597	508,252	397,791
Towns								
Ryley	373,547	355,633	509,308	499,523	335,707	386,274	372,595	420,679
Greater Towns								
Willingdon	538,562	743,003	609,039	562,811	642,602	641,499	539,887	583,626
Mundare	536,845	701,431	704,086	634,740	579,531	572,049	503,826	547,092
Holden	568,362	487,227	908,862	763,788	526,482	547,439	575,083	630,202
Tofield	165,874	203,988	252,301	204,843	132,410	173,332	158,651	181,296
Two Hills	592,226	713,716	615,564	616,671	508,841	540,877	434,607	612,792
Vegreville	749,771	862,059	1,002,479	839,307	667,307	799,296	641,034	798,129
Camrose	625,352	568,007	1,003,949	817,102	675,451	760,048	833,922	619,717

¹Rapeseed not included.

Source: Board of Grain Commissioners, Winnipeg.

Specified Acreage for Delivery Quota Purposes

Specified acreage reported to the Canadian Wheat Board, generally refers to that portion of total farm land which is seeded to cereal crops. While it includes summerfallow and forage crops and excludes oilseeds, it is nevertheless a good indicator of the amount of grain producing land tributary to a grain delivery point (Table 26). In conjunction with the Boards' delivery quota system, it also provides fairly reliable information on the magnitude of demand for elevator space at delivery points; as the number of specified acres denotes the number of bushels that are eligible for delivery at each quota increase.

For the area as a whole, specified acreage increased by about 4 per cent between 1960-61 and 1967-68. The majority of delivery points increased their specified acreage. The largest proportional changes took place at Ryley, Two Hills and Willingdon. Fitzallen and Haight had the largest proportional losses (other than the points which closed).

The eight largest communities, that is the town and greater towns, had about 58 per cent of the specified acreage of the area tributary to their grain elevators in 1967-68. This is up about 3 per cent from 1960-61.

TABLE 26. CANADIAN WHEAT BOARD SPECIFIED ACREAGE FOR DELIVERY QUOTA PURPOSES, BY DELIVERY POINT, 1960-61 TO 1967-68

Delivery Point	1960-61	1961-62 ¹	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	Per cent of change 1960-61 to 1967-68
Too Small to Classify									
Dinant	7,605	8,348	7,522	6,206	5,749	Closed	6,805	3,917	-
Fitzallen	8,087	9,998	9,944	8,534	7,275	6,627	8,714	Closed	-51.6
Shonts	11,177	11,367	10,648	10,524	8,748	9,561	9,912	10,193	+10.8
Bardo	9,199	9,626	8,299	9,161	9,628	9,408			
Hamlets									
Dodds	11,210	12,226	12,859	11,728	11,849	11,195	11,208	10,112	-9.8
Haight	11,763	11,338	11,734	11,886	11,576	11,069	10,713	5,846	-50.3
Kaleland	10,007	10,540	10,157	10,208	9,947	10,081	10,265	10,084	+0.8
Norma	7,352	8,161	7,782	7,383	7,486	7,436	8,295	8,261	+12.4
Inland	37,530	38,399	38,412	37,626	36,949	35,002	34,035	30,892	-17.7
Royal Park	27,386	29,319	31,423	29,254	29,416	29,525	29,648	30,701	+12.1
Warwick	42,606	42,278	43,174	44,609	44,079	44,665	43,651	41,801	-1.9
Villages									
Armena	24,724	24,300	24,092	24,671	24,898	25,492	25,423	26,022	+5.2
Ohaton	22,890	22,635	23,187	24,273	23,214	23,352	22,951	22,420	-2.1
Kingman	31,451	31,626	32,613	32,831	31,747	32,548	33,166	32,399	+3.0
Round Hill	35,191	34,428	36,432	37,227	37,226	36,911	37,127	37,252	+5.8
Hay Lakes	39,998	41,316	43,980	43,247	42,490	43,252	41,755	41,545	+3.9
Lavoy	57,259	61,707	62,212	62,974	63,295	60,681	61,946	63,103	+10.2
Hairy Hill	45,074	46,222	47,191	47,751	47,508	45,491	44,921	45,754	+1.5
Bawlf	56,909	57,855	59,410	61,434	60,391	62,043	60,882	59,084	+3.8
Towns									
Ryley	61,572	61,158	61,115	61,634	62,664	65,098	66,828	75,081	+21.9
Greater Towns									
Willingdon	73,208	75,289	74,904	76,466	76,414	78,502	79,750	82,432	+12.6
Mundare	73,146	71,382	71,310	70,194	69,142	69,030	67,621	68,218	-6.7
Holden	85,918	86,727	89,115	88,534	89,225	90,795	89,993	91,446	+6.4
Tofield	48,498	49,188	49,017	47,321	48,416	48,856	48,140	51,605	+6.4
Two Hills	81,512	82,437	83,921	85,351	87,202	87,056	88,380	92,642	+13.6
Vegreville	85,902	83,847	83,912	86,722	89,429	90,421	91,784	96,668	+12.5
Camrose	94,221	93,955	95,093	95,318	101,835	101,750	104,771	103,149	+9.5
Study Area Total	1,101,395	1,115,772	1,129,458	1,133,067	1,137,798	1,135,847	1,138,684	1,140,627	+3.6

¹Durum excluded from specified acreage.

Source: Canadian Wheat Board, Winnipeg.

Table 27 shows the proportion of specified acres devoted to Wheat Board grains. For the entire area in the crop year 1967-68 this figure was about 62 per cent. For the crop years shown in Table 27, this figure does not vary significantly. Within the area, Mundare and Royal Park have maintained the highest proportion of Board grains.

For the crop year 1967-68 an increase in the delivery quota of one bushel per specified acre could bring into the marketing system (country elevators) approximately 1.6 bushels per seeded acre of Board grains for the study area as a whole. The potential delivery per seeded acre of Board grains is the inverse of the ratio of Board grains to specified acreage.

TABLE 27. SPECIFIED ACRES DEVOTED TO CANADIAN WHEAT BOARD GRAINS¹, 1963-64 TO 1967-68

Delivery Point	Board Grains 1963-64		Board Grains 1964-65		Board Grains 1965-66		Board Grains 1966-67		Board Grains 1967-68	
	acres	per cent	acres	per cent	acres	per cent	acres	per cent	acres	per cent
Too Small to Classify										
Dinant	3,894	62.8	3,629	63.1	Closed	—	4,165	61.1	2,343	59.8
Fitzallen	5,564	65.2	4,402	60.5	4,145	62.6	4,901	56.2	Closed	—
Shonts	5,601	53.2	4,996	57.1	5,432	56.8	5,380	54.3	5,602	55.0
Bardo	5,025	54.9	5,654	58.7	5,058	53.8				
Hamlets										
Dodds	7,407	63.2	7,254	61.2	6,550	58.5	6,829	60.9	6,368	63.0
Haight	8,199	69.0	8,118	70.1	7,604	68.7	7,389	69.0	3,773	64.5
Kaleland	6,297	61.7	6,560	66.0	6,014	59.7	5,885	57.3	6,504	64.5
Norma	4,837	65.5	4,996	66.7	4,773	64.2	5,274	63.6	5,201	63.0
Inland	25,051	66.6	25,231	68.3	24,454	69.9	22,342	65.6	20,247	65.5
Royal Park	20,591	70.4	21,179	72.0	20,633	69.9	20,698	69.8	21,389	69.7
Warwick	30,257	67.8	29,761	67.5	29,143	65.3	29,157	66.8	26,663	63.8
Villages										
Armena	14,303	58.0	14,818	59.5	11,906	46.7	14,574	57.3	14,730	56.6
Ohaton	14,038	57.8	14,051	60.5	13,505	57.8	13,954	60.8	13,753	61.3
Kingman	19,232	58.6	18,200	57.3	17,598	54.1	19,203	57.9	18,480	57.0
Round Hill	22,779	61.2	22,581	60.7	25,591	58.5	22,834	61.5	22,053	59.2
Hay Lakes	23,688	54.8	23,987	56.5	22,882	52.9	22,416	53.8	21,574	51.9
Lavoy	40,496	64.3	39,906	63.1	36,962	60.9	37,477	60.5	38,141	60.4
Hairy Hill	31,388	65.7	31,227	65.7	30,465	67.0	29,858	66.5	30,289	66.2
Bawlf	37,542	61.1	36,265	60.1	37,921	61.1	37,862	62.2	35,360	59.9
Towns										
Ryley	39,012	63.3	39,759	63.4	40,107	61.6	41,670	62.4	47,147	62.8
Greater Towns										
Willingdon	51,529	67.4	51,895	67.9	50,593	64.5	52,613	66.0	53,136	64.5
Mundare	49,671	70.8	49,960	72.3	48,159	69.8	48,453	71.7	47,302	69.3
Holden	57,975	65.5	59,512	66.7	58,428	64.4	58,227	64.7	59,180	64.7
Tofield	25,216	63.3	25,374	52.4	23,489	48.1	24,136	50.1	27,286	52.9
Two Hills	51,398	60.2	54,858	62.9	53,006	60.9	53,905	61.0	56,416	60.9
Vegreville	56,725	65.4	57,582	64.4	57,997	64.1	60,387	65.8	63,690	65.9
Camrose	56,022	58.8	60,395	59.3	61,702	60.6	64,623	61.7	62,673	60.8
Study Area Total	713,737	63.0	722,150	63.5	704,117	62.0	714,203	62.7	709,300	62.2

¹Board Grains are: Wheat, Durum, Oats, Barley.

Source: Canadian Wheat Board, Winnipeg.

In Table 28 the ratio of storage capacity to specified acreage, shows what quota, in bushels per acre, would be necessary to completely fill an empty delivery point. For example, in Camrose a quota of about 5 (4.7) bushels per specified acre would completely fill all available storage space.

The lower the ratio the greater is the demand for space at a delivery point. Glancing at Table 28 one readily sees that the demand for space at the larger communities is greater than that at the smaller. If a supplementary 5 bushel quota were applied to the entire study area, and assuming that all elevators were empty, and no grain moved out, then Two Hills would be completely filled, Dodds about half full and Camrose could not accomodate the supplementary quota unless about 31,000 bushels of grain were moved out of the elevator. Hay Lakes, Tofield and Armena could not handle this supplementary quota unless 54,000; 46,000; and 18,000 bushels of grain were moved out of their grain elevators. As the Wheat Board attempts to equalize quotas between producers, those points with a low ratio of capacity to specified acreage are able to maintain a higher through-put ratio than the points with a high ratio of capacity to specified acreage. The through-put ratio is the total receipts of grain in one year divided by the total storage capacity.

The last column in Table 28 shows the number of railway boxcars needed to move a one-bushel per specified acre amount of grain out of the delivery points. The larger the number of boxcars the more important is that delivery point as a grain shipping point. In the study area the range is from 5 at Bardo to 52 at Camrose (Fitzallen and Haight are now closed). In general the larger is the community the greater is its relative importance to the grain industry.

TABLE 28. QUOTA IN BUSHEL PER SPECIFIED ACRE NECESSARY TO FILL STORAGE CAPACITY OF DELIVERY POINT WITH AN ASSUMED ZERO INVENTORY LEVEL.

Delivery Point	Specified Acres as of November 21, 1967	Capacity in Bushels July, 1968	Ratio of Capacity to Specified Acres	Number of Box-Cars To Move a One Bushel Quota ¹
Too Small To Classify				
Dinant	closed			
Fitzallen	3,917	70,500	18.0	2
Shonts	closed			
Bardo	10,193	72,000	7.1	5
Hamlets				
Dodds	10,112	105,000	10.4	5
Haight	5,846	51,000	8.7	3
Kaleland	10,084	62,000	6.2	5
Norma	8,261	60,000	7.3	5
Inland	30,892	218,000	7.1	16
Royal Park	30,701	294,500	9.6	16
Warwick	41,801	263,000	6.3	21
Villages				
Armena	26,022	111,000	4.3	13
Chaton	22,420	158,500	7.1	12
Kingman	32,399	193,000	6.0	17
Round Hill	37,252	195,400	5.3	19
Hay Lakes	41,545	155,000	3.7	21
Lavoy	63,103	439,000	7.0	32
Hairy Hill	45,754	276,500	6.0	23
Bawlf	59,084	442,500	7.5	30
Towns				
Ryley	75,081	447,000	6.0	38
Greater Towns				
Willingdon	82,432	502,000	6.1	42
Mundare	68,218	608,000	8.9	35
Holden	91,446	534,000	5.8	46
Tofield	51,605	209,000	4.1	26
Two Hills	92,642	460,500	5.0	47
Vegreville	96,668	543,600	5.6	49
Camrose	103,149	480,000	4.7	52

¹ Assume 2,000 Bushels per box-car.

The number of boxcars that may be placed on track at the elevator sidings for each delivery point is shown in Table 29. Generally speaking, the larger the point with respect to number of elevators and total capacity, the more boxcar space there is available. The difference is not proportional however.

TABLE 29. MAXIMUM NUMBER OF BOX-CARS THAT CAN BE HANDLED IN ONE SHUNT BY SPECIFIED COUNTRY ELEVATORS IN THE STUDY AREA, JULY 1968.

Delivery Point	Number of Cars per Point	Elevator Companies	Number of Cars per Elevator
Too Small To Classify			
Bardo	12	C.N. Alberta Wheat Pool	12
Hamlets			
Dodds	8	C.N. Federal Grain Co.	8
Kaleland	8	C.P. Pioneer Grain Co.	8
Norma	10	C.P. Federal Grain Co.	10
Inland	21	C.N. Alberta Wheat Pool	14
		C.N. United Grain Growers	7
Royal Park	17	C.N. Alberta Wheat Pool	6
		C.N. Federal Grain Ltd.	11
Warwick	12	C.P. Alberta Wheat Pool	12
Villages			
Armena	6	C.N. Alberta Wheat Pool	4
		C.N. United Grain Growers	2
Ohaton	18	C.P. Alberta Wheat Pool	8
		C.P. Federal Grain Ltd.	10
Kingman	17	C.N. Alberta Wheat Pool	12
		C.N. United Grain Growers	5
Round Hill	18	C.N. Alberta Wheat Pool	11
		C.N. Federal Grain Ltd.	7
Hay Lakes	15	C.N. Alberta Wheat Pool	5
		C.N. United Grain Growers	10
Lavoy	19	C.N. Alberta Wheat Pool	3
		C.N. Federal Grain Ltd.	7
		C.N. National Grain Co. Ltd.	4
		C.N. United Grain Growers	5
Hairy Hill	18	C.P. Alberta Wheat Pool	4
		C.P. National Grain Co. Ltd.	7
		C.P. Pioneer Grain Co.	7
Bawlf	23	C.P. Alberta Wheat Pool	12
		C.P. Federal Grain Ltd.	8
		C.P. United Grain Growers	3
Towns			
Ryley	12	C.N. Alberta Wheat Pool	5
		C.N. Federal Grain Ltd.	7
Greater Towns			
Willingdon	30	C.P. Alberta Wheat Pool	5
		C.P. Federal Grain Ltd.	12
		C.P. Pioneer Grain Co.	4
		C.P. United Grain Growers	9
Mundare	28	C.N. Federal Grain Ltd.	18
		C.N. National Grain Co. Ltd.	4
		C.N. United Grain Growers	6

(continued)

TABLE 29. MAXIMUM NUMBER OF BOX-CARS THAT CAN BE HANDLED IN ONE SHUNT BY SPECIFIED COUNTRY ELEVATORS IN THE STUDY AREA, JULY 1968. (concluded)

Delivery Point	Number of Cars per Point	Elevator Companies	Number of Cars per Elevator
Holden	24	C.N. Alberta Wheat Pool	8
		C.N. Federal Grain Ltd.	7
		C.N. National Grain Co. Ltd.	4
		C.N. United Grain Growers	5
Tofield	11	C.N. Alberta Wheat Pool	6
		C.N. Federal Grain Ltd.	5
Two Hills	19	C.P. Alberta Wheat Pool	6
		C.P. Federal Grain Ltd.	8
		C.P. United Grain Growers	5
Vegreville	23	C.N. Alberta Wheat Pool	10
		C.N. National Grain Co. Ltd.	3
		C.P. National Grain Co. Ltd.	3
		C.P. United Grain Growers	7
Camrose	28	C.P. Alberta Wheat Pool	3
		C.N. Alberta Wheat Pool	5
		C.P. Byers Flour Mills Ltd.	6
		C.P. Federal Grain Ltd.	6
		C.P. United Grain Growers	4
		C.N. United Grain Growers	4

Source: Information gathered from respective grain elevator companies.

Farm Trucks

Table 30 shows the estimated number, and number by size, of trucks in the study area for the crop year 1966-67. The number of trucks was estimated from census data that closely approximates the study area. The average number of trucks per farm, taken from the census data, was applied to the 3,939 grain farms of the area. Estimates, by size of truck, were obtained by using results of a survey conducted by the Department of Energy, Mines and Resources. The proportions of sizes of trucks from the survey were applied to the estimated total of 4,300 trucks in the area. It is estimated that there was approximately one truck per farm, on the average, and that the most popular size of truck is the one ton. The survey indicated however that many of the small farms did not have a truck, whereas the larger sizes of farms have two trucks.

TABLE 30.- ESTIMATED NUMBER, AND NUMBER BY SIZE, OF TRUCKS IN THE STUDY AREA, 1966

Size of Truck (Ton Capacity)	Estimated Number of Trucks
$\frac{1}{2}$	1,070
$\frac{3}{4}$	265
1	1,140
$1\frac{1}{2}$	320
2	710
$2\frac{1}{2}$	50
3	745
TOTAL	4,300

Hauling Distance

Table 31 shows the average mileage, and the range of hauling distances for grain farmers at delivery points in the study area. From the table, one can see that the larger centres not only attract more patronage for grain deliveries, but also attract patronage from farther distance. In examining the average length of haul one finds that to the smallest centres it is around 3 miles whereas to the larger centres it is about 8-9 miles.

TABLE 31. FARM TO ELEVATOR HAULING DISTANCES, BY DELIVERY POINT, 1962-63

Delivery Point	Number of Farms	Hauling Distance			Average Mileage
		High	Low	Range	
— miles —					
Too Small To Classify					
Dinant	34	7.25	0.50	6.75	3.30
Fitzallen	33	8.75	0.50	8.25	3.54
Shonts	26	5.50	0.75	4.75	3.33
Bardo	35	7.75	0.50	7.25	2.51
Hamlets					
Dodds	37	7.00	0.50	6.50	3.23
Haight	59	9.75	0.50	9.25	3.77
Kaleland	44	15.25	0.50	14.75	4.60
Norma	31	5.75	0.50	5.25	3.16
Inland	138	11.75	0.50	11.25	5.14
Royal Park	122	16.20	0.50	15.70	5.46
Warwick	181	14.75	0.75	14.00	5.81
Villages					
Armena	100	11.00	0.50	10.50	3.92
Ohaton	65	10.50	1.15	9.35	4.38
Kingman	131	16.50	0.50	16.00	5.09
Round Hill	130	15.50	1.00	14.50	5.32
Hay Lakes	221	15.00	0.50	14.50	5.67
Lavoy	230	18.75	0.75	18.00	7.61
Hairy Hill	205	15.50	0.50	15.00	6.19
Bawlf	180	18.75	1.20	17.55	6.83
Towns					
Ryley	217	16.80	1.00	15.80	7.27
Greater Towns					
Willingdon	333	20.25	1.00	19.25	8.10
Mundare	315	17.00	0.50	16.50	6.68
Holden	334	18.00	0.50	17.50	7.70
Tofield	212	25.50	0.25	25.25	8.25
Two Hills	367	21.50	0.75	20.75	9.45
Vegreville	291	20.50	0.50	20.00	7.24
Camrose	280	23.75	0.50	23.25	8.82
Study Area Total	4351	25.50	0.25	25.25	6.84

Rationalization of Grain Delivery Points

The preceding sections have dealt with the economic make-up of the communities in the study area. This last section will deal with how far producers would have to travel, as well as how much additional grain would probably have to be handled by alternate delivery points, if certain points were assumed closed.

In Table 32, we attempt to show how much additional grain would have to be handled by alternate delivery points if certain points were closed. The method employed to divert grain is on the basis of the relative proportions of farm land being diverted. As an example, assume delivery point A was to be closed, and its nearest diversion points are B and C. Further assume that 75 per cent of the farm land tributary to A is diverted to B, and 25 per cent to C. The proportions are then applied to the actual amount of grain delivered to A for diversion to B and C for any given year. The base for all calculations is the Canadian Wheat Board permits for the crop year 1962-63.

Tables 34 and 35 show the proportions of farm land, tributary to delivery points assumed closed in the study, diverted to their alternate or diversion points. By applying the proportions in Tables 34 and 35 to the actual deliveries of grain to the points assumed closed one may calculate the estimated additional through-put shown in Tables 32 and 33 respectively.

In Table 32, it is assumed that Dinant, Kingman, Bardo, Round Hill, Dodds, Haight, Inland, Shonts and Fitzallen were closed. The diversion or alternate points are listed across the top of Table 32. Upon the assumed closure of Dinant, those producers, who delivered to Dinant in 1962-63, would now deliver to either Camrose or Armena.

If these nine points were closed the most important diversion point, in the sense of additional grain to handle, would be Tofield. For the crop year 1966-67 it is estimated that Tofield would have received, in addition to deliveries from producers actually holding Tofield permits, 245,530 bushels of grain. This figure is shown under the column Tofield, in the last row at the bottom of Table 32. For the crop year 1966-67, the actual deliveries to Tofield were 158,651 bushels of grain (Table 25). If the nine points were closed, Tofield would have had to handle an estimated 404,181 bushels of grain ($245,530 + 158,651$), for the crop year 1966-67.

Table 33 shows the estimated diversions of grain if in addition to the previous nine points, Warwick and Norma were also assumed closed. Tofield still remains as the major diversion point, although it would not be affected by the assumed closures of Warwick and Norma.

TABLE 32. PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67.

Specified Points	Alternative ¹ Delivery Points												
	Lavoy	Bawlf	Mundare	Warwick	Camrose	Armena	Hay Lakes	Holden	Vegre-ville	Royal Park	Ohaton	Ryley	Tofield
— bushels —													
Dinant													
1960-61	-	-	-	-	13,315	48,043	-	-	-	-	-	-	-
1961-62	-	-	-	-	19,872	71,704	-	-	-	-	-	-	-
1962-63	-	-	-	-	16,761	60,479	-	-	-	-	-	-	-
1963-64	-	-	-	-	13,173	47,533	-	-	-	-	-	-	-
1964-65	-	-	-	-	9,936	35,852	-	-	-	-	-	-	-
1965-66	-	-	-	-	7	23	-	-	-	-	-	-	-
1966-67	-	-	-	-	-	-	-	-	-	-	-	-	-
Kingman													
1960-61	-	-	-	-	-	37,882	38,885	-	-	-	-	-	123,670
1961-62	-	-	-	-	-	45,852	47,065	-	-	-	-	-	149,687
1962-63	-	-	-	-	-	56,655	58,154	-	-	-	-	-	184,953
1963-64	-	-	-	-	-	46,834	48,073	-	-	-	-	-	152,893
1964-65	-	-	-	-	-	32,338	33,193	-	-	-	-	-	105,567
1965-66	-	-	-	-	-	35,573	33,434	-	-	-	-	-	106,335
1966-67	-	-	-	-	-	37,190	38,173	-	-	-	-	-	121,407
Bardo													
1960-61	-	-	-	-	-	-	-	-	-	-	-	-	60,060
1961-62	-	-	-	-	-	-	-	-	-	-	-	-	69,323
1962-63	-	-	-	-	-	-	-	-	-	-	-	-	78,829
1963-64	-	-	-	-	-	-	-	-	-	-	-	-	63,980
1964-65	-	-	-	-	-	-	-	-	-	-	-	-	52,642
1965-66	-	-	-	-	-	-	-	-	-	-	-	-	47,053
1966-67	-	-	-	-	-	-	-	-	-	-	-	-	51,013
Round Hill													
1960-61	-	1,823	-	-	21,872	-	-	-	-	-	101,547	88,528	46,607
1961-62	-	1,671	-	-	20,051	-	-	-	-	-	93,096	81,160	42,729
1962-63	-	1,853	-	-	22,231	-	-	-	-	-	103,215	89,983	47,373
1963-64	-	2,376	-	-	28,509	-	-	-	-	-	132,364	115,395	60,752
1964-65	-	1,579	-	-	18,942	-	-	-	-	-	87,946	76,671	40,365
1965-66	-	1,899	-	-	22,787	-	-	-	-	-	105,798	92,235	48,559
1966-67	-	1,960	-	-	23,518	-	-	-	-	-	109,190	95,191	50,116

(Continued)

TABLE 32. PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67. (continued)

Specified Points	Alternative ¹ Delivery Points												
	Lavoy	Bawlf	Mundare	Warwick	Camrose	Armena	Hay Lakes	Holden	Vegre- ville	Royal Park	Ohaton	Ryley	Tofield
— bushels —													
Dodds													
1960-61	-	-	-	-	-	-	-	-	-	-	-	94,527	8,108
1961-62	-	-	-	-	-	-	-	-	-	-	-	89,296	7,660
1962-63	-	-	-	-	-	-	-	-	-	-	-	112,814	9,677
1963-64	-	-	-	-	-	-	-	-	-	-	-	94,182	8,079
1964-65	-	-	-	-	-	-	-	-	-	-	-	64,961	5,572
1965-66	-	-	-	-	-	-	-	-	-	-	-	83,593	7,170
1966-67	-	-	-	-	-	-	-	-	-	-	-	75,582	6,483
Haight													
1960-61	-	-	5,226	-	-	-	-	21,053	-	-	-	48,378	-
1961-62	-	-	6,604	-	-	-	-	26,606	-	-	-	61,138	-
1962-63	-	-	6,974	-	-	-	-	28,093	-	-	-	64,554	-
1963-64	-	-	7,209	-	-	-	-	29,043	-	-	-	66,736	-
1964-65	-	-	5,325	-	-	-	-	21,450	-	-	-	49,290	-
1965-66	-	-	5,942	-	-	-	-	23,938	-	-	-	55,007	-
1966-67	-	-	4,468	-	-	-	-	18,001	-	-	-	41,363	-
Inland													
1960-61	-	-	19,408	-	-	-	-	61,882	59,350	130,233	-	10,407	-
1961-62	-	-	26,794	-	-	-	-	85,430	81,935	179,790	-	14,368	-
1962-63	-	-	25,865	-	-	-	-	82,468	79,095	173,558	-	13,870	-
1963-64	-	-	24,979	-	-	-	-	79,644	76,386	167,615	-	13,395	-
1964-65	-	-	17,650	-	-	-	-	56,274	53,972	118,431	-	9,464	-
1965-66	-	-	18,346	-	-	-	-	58,494	56,102	123,104	-	9,838	-
1966-67	-	-	14,871	-	-	-	-	47,416	45,476	99,789	-	7,975	-
Shonts													
1960-61	-	-	-	-	-	-	-	-	-	-	-	40,403	31,361
1961-62	-	-	-	-	-	-	-	-	-	-	-	41,476	32,193
1962-63	-	-	-	-	-	-	-	-	-	-	-	59,878	46,478
1963-64	-	-	-	-	-	-	-	-	-	-	-	44,503	34,543
1964-65	-	-	-	-	-	-	-	-	-	-	-	26,030	20,205
1965-66	-	-	-	-	-	-	-	-	-	-	-	34,215	26,558
1966-67	-	-	-	-	-	-	-	-	-	-	-	21,272	16,511

(Continued)

(Continued)

TABLE 32. PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67. (concluded)

Specified Points	Alternative ¹ Delivery Points												
	Lavoy	Bawlf	Mundare	Warwick	Camrose	Armena	Hay Lakes	Holden	Vegre- ville	Royal Park	Ohaton	Ryley	Tofield
— bushels —													
Fitzallen													
1960-61	1,037	—	—	32,292	—	—	—	—	35,625	5,110	—	—	—
1961-62	1,686	—	—	52,495	—	—	—	—	57,913	8,308	—	—	—
1962-63	1,388	—	—	43,239	—	—	—	—	47,701	6,843	—	—	—
1963-64	1,241	—	—	38,650	—	—	—	—	42,639	6,117	—	—	—
1964-65	845	—	—	26,320	—	—	—	—	29,036	4,165	—	—	—
1965-66	900	—	—	28,034	—	—	—	—	30,926	4,436	—	—	—
1966-67	665	—	—	20,691	—	—	—	—	22,827	3,274	—	—	—
All Nine Points													
1960-61	1,037	1,823	24,634	32,292	35,187	85,925	38,885	82,935	94,975	135,343	101,547	282,243	269,806
1961-62	1,686	1,671	33,398	52,495	39,923	117,556	47,065	112,036	139,848	188,098	93,096	287,438	301,592
1962-63	1,388	1,853	32,839	43,239	38,992	117,134	58,154	110,561	126,796	180,401	103,215	341,099	367,310
1963-64	1,241	2,376	32,188	38,650	41,682	94,367	48,073	108,687	119,025	173,732	132,364	334,211	320,247
1964-65	845	1,579	22,975	26,320	28,878	68,190	33,193	77,724	83,008	122,596	87,946	226,416	224,351
1965-66	900	1,899	24,288	28,034	22,794	32,596	33,434	82,432	87,029	127,540	105,798	274,888	235,675
1966-67	665	1,960	19,339	20,691	23,518	37,190	38,173	65,417	68,303	103,063	109,190	241,383	245,530

¹Nearest delivery point to farm, via good roads; all else assumed unchanged.

TABLE 33. PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67. (continued)

Specified Points	Lavoy	Two Hills	Bawlf	Camrose	Mundare	Alternative ¹ Delivery Points										Ryley	Tofield
						Willingdon	Armena	Hay Lakes	Kaleland	Holden	Hairy Hill	Ohaton	Vegreville	Royal Park			
— bushels —																	
Inland																	
1960-61	—	—	—	—	19,408	—	—	—	—	61,882	—	—	59,350	130,233	10,407	—	—
1961-62	—	—	—	—	26,794	—	—	—	—	85,430	—	—	81,935	179,790	14,368	—	—
1962-63	—	—	—	—	25,865	—	—	—	—	82,468	—	—	79,095	173,558	13,870	—	—
1963-64	—	—	—	—	24,979	—	—	—	—	79,644	—	—	76,386	167,615	13,395	—	—
1964-65	—	—	—	—	17,650	—	—	—	—	56,274	—	—	53,972	118,431	9,464	—	—
1965-66	—	—	—	—	18,346	—	—	—	—	58,494	—	—	56,102	123,104	9,838	—	—
1966-67	—	—	—	—	14,871	—	—	—	—	47,416	—	—	45,476	99,789	7,975	—	—
Shonts																	
1960-61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40,403	31,361	—
1961-62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41,476	32,193	—
1962-63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	59,878	46,478	—
1963-64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44,503	34,543	—
1964-65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26,030	20,205	—
1965-66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34,215	26,558	—
1966-67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21,272	16,511	—
Fitzallen																	
1960-61	1,037	—	—	—	—	—	—	—	—	—	—	—	57,102	15,924	—	—	—
1961-62	1,686	—	—	—	—	—	—	—	—	—	—	—	92,829	25,886	—	—	—
1962-63	1,388	—	—	—	—	—	—	—	—	—	—	—	76,461	21,322	—	—	—
1963-64	1,241	—	—	—	—	—	—	—	—	—	—	—	68,347	19,059	—	—	—
1964-65	845	—	—	—	—	—	—	—	—	—	—	—	46,542	12,979	—	—	—
1965-66	900	—	—	—	—	—	—	—	—	—	—	—	49,572	13,824	—	—	—
1966-67	665	—	—	—	—	—	—	—	—	—	—	—	36,589	10,203	—	—	—

(Continued)

(Continued)

TABLE 33. PROBABLE ADDITIONAL THROUGH-PUT AT ALTERNATIVE DELIVERY POINTS IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED, 1960-61 TO 1966-67. (concluded)

Specified Points	Alternative ¹ Delivery Points															
	Lavoy	Two Hills	Bawlf	Camrose	Mundare	Willingdon	Armena	Hay Lakes	Kaleland	Holden	Hairy Hill	Ohaton	Vegreville	Royal Park	Ryley	Tofield
Warwick								— bushels —								
1960-61	—	1,977	—	—	6,921	18,455	—	—	49,105	—	97,221	—	54,707	101,175	—	—
1961-62	—	2,678	—	—	9,371	24,990	—	—	66,492	—	131,644	—	74,078	136,999	—	—
1962-63	—	2,465	—	—	8,627	23,006	—	—	61,213	—	121,193	—	68,196	126,122	—	—
1963-64	—	2,224	—	—	7,781	20,749	—	—	55,207	—	109,303	—	61,506	113,749	—	—
1964-65	—	1,984	—	—	6,942	18,513	—	—	49,257	—	97,522	—	54,877	101,489	—	—
1965-66	—	2,009	—	—	7,033	18,755	—	—	49,902	—	98,799	—	55,595	102,818	—	—
1966-67	—	1,612	—	—	5,643	15,049	—	—	40,042	—	79,277	—	44,610	82,502	—	—
Norma																
1960-61	—	—	—	—	—	29,242	—	—	—	—	26,246	—	—	—	—	—
1961-62	—	—	—	—	—	37,335	—	—	—	—	33,509	—	—	—	—	—
1962-63	—	—	—	—	—	28,545	—	—	—	—	25,620	—	—	—	—	—
1963-64	—	—	—	—	—	21,971	—	—	—	—	19,719	—	—	—	—	—
1964-65	—	—	—	—	—	25,266	—	—	—	—	22,678	—	—	—	—	—
1965-66	—	—	—	—	—	18,907	—	—	—	—	16,969	—	—	—	—	—
1966-67	—	—	—	—	—	18,918	—	—	—	—	16,979	—	—	—	—	—
All Eleven Points																
1960-61	1,037	1,977	1,823	35,187	31,555	47,697	85,925	38,885	49,105	82,935	123,467	101,547	171,159	247,332	282,243	269,806
1961-62	1,686	2,678	1,671	39,923	42,769	62,325	117,556	47,065	66,492	112,036	165,153	93,096	248,842	342,675	287,438	301,592
1962-63	1,388	2,465	1,853	38,992	41,466	51,551	117,134	58,154	61,213	110,561	146,813	103,215	223,752	321,000	341,099	367,310
1963-64	1,241	2,224	2,376	41,682	39,969	42,720	94,367	48,073	55,207	108,687	129,022	132,364	206,239	300,423	334,211	320,247
1964-65	845	1,984	1,579	28,878	29,917	43,779	68,190	33,193	49,257	77,724	120,200	87,946	155,391	232,899	226,416	224,351
1965-66	900	2,009	1,899	22,794	31,321	37,662	32,596	33,434	49,902	82,432	115,768	105,798	161,269	239,746	274,888	235,675
1966-67	665	1,612	1,960	23,518	24,982	33,967	37,190	38,173	40,042	65,417	96,256	109,190	126,675	192,494	241,383	245,530

¹Nearest delivery point to farm, via good roads; all else assumed unchanged.

TABLE 35. PROBABLE ACREAGE DIVERTED IF SPECIFIED DELIVERY POINTS IN THE STUDY AREA HAD BEEN CLOSED.

Specified Points	Lavoy	Two Hills	Bawlf Camrose	Mun- dare	Alternate ¹ Delivery Points					Hairy Hill	Ohaton	Vegre- ville	Royal Park	Ryley	Tofield
					Willing- don	Armena	Hay Lakes	Kale- land	Holden						
					— per cent of acres —										
Dinant	—	—	21.7	—	78.3	—	—	—	—	—	—	—	—	—	—
Kingman	—	—	—	—	18.9	19.4	—	—	—	—	—	—	—	—	61.7
Bardo	—	—	—	—	—	—	—	—	—	—	—	—	—	—	100.0
Round Hill	—	—	0.7	—	—	—	—	—	—	—	39.0	—	—	34.0	17.9
Dodds	—	—	—	—	—	—	—	—	—	—	—	—	—	92.1	7.9
Haight	—	—	—	7.0	—	—	—	—	28.2	—	—	—	—	64.8	—
Inland	—	—	—	6.9	—	—	—	—	22.0	—	—	21.1	46.3	3.7	—
Shonts	—	—	—	—	—	—	—	—	—	—	—	—	—	56.3	43.7
Fitzallen	1.4	—	—	—	—	—	—	—	—	—	—	77.1	21.5	—	—
Warwick	—	0.6	—	2.1	5.6	—	—	14.9	—	29.5	—	16.6	30.7	—	—
Norma	—	—	—	—	52.7	—	—	—	—	47.3	—	—	—	—	—

¹Nearest delivery point to farm, via good roads; all else assumed unchanged.

Change in Through-Put-Ratio

Table 36 shows through-put ratios for the grain delivery points in the study area for the crop year 1962-63 and 1966-67 before and after any assumed closures. Through-put ratios are the amount of grain handled by an elevator in any given year divided by its capacity. The actual ratios are obtained by dividing actual handlings (Table 25) by elevator capacity. Ratios after diversion, are obtained by adding the diverted grain to the actual handlings and dividing the total by the elevator capacity.

The delivery point whose ratio would be most affected after the assumed closures would be Tofield. Upon the assumed closure of the first nine points the ratio would have risen from 1.2 to 3.0 in 1962-63 and from 0.8 to 1.9 in 1966-67. The assumed closure of the last two points (Warwick and Norma) would not affect Tofield.

The ratios of handling to capacity, as shown in Table 36, would indicate that no additional elevator capacity would be necessary at any of the delivery points used for diversion of grain, if the eleven points were closed. After diversion only Tofield and Armena would have through-put ratios of three or more for the two years shown.

TABLE 36. RATIO OF GRAIN DELIVERIES TO STORAGE CAPACITY IF SPECIFIED DELIVERY POINTS HAD BEEN CLOSED,¹ 1962-63 AND 1966-67

	1962-63 ¹	1966-67 ¹	1962-63 ²	1966-67 ²	1962-63 ³	1966-67 ³
Dinant	1.4	-	-	-	-	-
Kingman	1.6	1.0	-	-	-	-
Bardo	1.9	0.7	-	-	-	-
Round Hill	1.4	1.4	-	-	-	-
Dodds	1.1	0.8	-	-	-	-
Haight	1.9	1.3	-	-	-	-
Inland	1.7	1.0	-	-	-	-
Shonts	1.3	1.3	-	-	-	-
Fitzallen	1.4	0.7	-	-	-	-
Warwick	1.6	1.0	1.7	1.1	-	-
Norma	0.9	0.6	0.9	0.6	-	-
Lavoy	1.8	0.9	1.8	0.9	1.8	0.9
Two Hills	1.5	0.9	1.5	0.9	1.5	0.9
Bawlf	2.2	1.1	2.2	1.2	2.2	1.2
Camrose	2.7	1.7	2.8	1.8	2.8	1.8
Mundare	1.1	0.8	1.2	0.9	1.2	0.9
Willingdon	1.6	1.0	1.6	1.0	1.7	1.1
Armena	2.4	1.6	3.5	2.0	3.5	2.0
Hay Lakes	1.6	1.6	1.9	1.9	1.9	1.9
Kaleland	1.4	1.1	1.4	1.1	2.4	1.7
Holden	1.9	1.1	2.1	1.2	2.1	1.2
Hairy Hill	1.2	1.1	1.2	1.1	1.6	1.4
Ohaton	1.6	1.3	2.2	2.0	2.2	2.0
Vegreville	2.0	1.2	2.3	1.3	2.5	1.4
Royal Park	1.3	1.1	2.1	1.5	2.6	1.9
Ryley	1.7	0.8	2.8	1.4	2.8	1.4
Tofield	1.2	0.8	3.0	1.9	3.0	1.9

¹Ratios of actual handlings for all points for crop years 1962-63 and 1966-67.

²Ratios after diversion of Dinant, Kingman, Bardo, Round Hill, Dodds, Haight, Inland, Shonts and Fitzallen for crop years 1962-63 and 1966-67.

³Ratios after diversion of ² plus Warwick and Norma for crop years 1962-63 and 1966-67.

Additional Haul

An important impact of the closure of an elevator point is the increased length of haul that would have to be undertaken by those producers affected by closure. This is shown in Tables 37 and 38. Table 37 shows the average haul in 1962-63 for producers delivering to points that were assumed to be closed in the study. It also shows estimates of how far they would have to haul if their current (1962-63) delivery points were closed.

The producers who delivered to Dinant in 1962-63 hauled an average of 3.3 miles. After Dinant is assumed closed they would travel 8.35 miles or 5.05 miles more than before Dinant was closed (Table 37). Referring back to Table 32, one finds that upon the assumed closure of Dinant, the producers would likely deliver to either Camrose or Armena depending upon their location. The producers who delivered to Round Hill would likely be the greatest affected with respect to additional haul. In 1962-63, the average haul to Round Hill was estimated to be 5.32 miles. Upon the assumed closure of Round Hill, those producers would haul 13.1 miles or an additional 7.78 miles. Depending upon their location, they would likely divert their deliveries to Bawlf, Camrose, Ohaton, Ryley or Tofield. One must keep in mind that Round Hill is not assumed closed in isolation but along with the other points listed in footnote 1 of Table 37. Therefore producers are diverted not necessarily to the closest alternate point but to the closest alternate not assumed closed.

Table 38 shows the size of the service areas, in terms of average hauling distance for 1962-63 of the delivery points used as alternates, as well as their estimated size after the specified points are assumed closed. In 1962-63, Two Hills had the largest average service area, 9.45 miles. With the assumed closure of the eleven points, Ohaton has the greatest increase in its service area size. It increases from 4.38 miles to 8.12 miles; an increase of 3.74 miles. This is still less than the service area of Two Hills. Information on the other points in the study area may be likewise obtained by following through Tables 32 to 38.

TABLE 37. AVERAGE FARM-TO-ELEVATOR HAULING DISTANCES IN THE STUDY AREA 1962-63 AND ESTIMATED AVERAGE IF SPECIFIED ELEVATOR POINTS HAD BEEN CLOSED.

Delivery Point	Average Distance 1962-63	Average Distance (see footnote 1)	Average Distance (see footnote 2)
	- miles -		
Dinant	3.30	8.35	8.35
Additional haul		5.05	5.05
Kingman	5.09	11.28	11.28
Additional haul		6.19	6.19
Bardo	2.51	6.22	6.22
Additional haul		3.71	3.71
Round Hill	5.32	13.10	13.10
Additional haul		7.78	7.78
Dodds	3.23	8.93	8.93
Additional haul		5.70	5.70
Haight	3.77	9.86	9.86
Additional haul		6.09	6.09
Inland	5.14	10.36	10.36
Additional haul		5.22	5.22
Shonts	3.33	5.05	5.05
Additional haul		1.72	1.72
Fitzallen	3.54	5.94	7.08
Additional haul		2.40	3.54
Warwick	5.84	5.84	19.87
Additional haul		-	4.03
Norma	3.16	3.16	8.26
Additional haul		-	5.10

¹Assume Dinant, Kingman, Bardo, Round Hill, Dodds, Haight, Inland, Shonts, and Fitzallen closed.

²Assume, in addition to ¹ that Warwick and Norma closed.

TABLE 38. AVERAGE FARM-TO-ELEVATOR HAULING DISTANCES, 1962-63, AND INCREASED SIZE OF HINTERLANDS OF DELIVERY POINTS BEING USED AS GRAIN DIVERSION POINTS.

Diversion Points	Average Distance 1962-63	Average Distance (see footnote 1)	Average Distance (see footnote 2)
	- miles -		
Warwick	5.84	5.82	-
Additional Size		(decrease) 0.02	-
Lavoy	7.61	7.62	7.62
Additional Size		0.01	0.01
Two Hills	9.45	9.45	9.45
Additional Size		-	0.00
Bawlf	6.83	6.88	6.88
Additional Size		0.05	0.05
Camrose	8.82	8.99	8.99
Additional Size		0.17	0.17
Mundare	6.68	6.90	6.92
Additional Size		0.22	0.24
Willingdon	8.10	8.10	8.25
Additional Size		-	0.15
Armena	3.92	6.05	6.05
Additional Size		2.13	2.13
Hay Lakes	5.67	6.20	6.20
Additional Size		0.53	0.53
Kaleland	4.60	4.60	6.69
Additional Size		-	2.09
Holden	7.70	8.07	8.07
Additional Size		0.37	0.37
Hairy Hill	6.19	6.19	7.05
Additional Size		-	0.86
Ohaton	4.38	8.12	8.12
Additional Size		3.74	3.74
Vegreville	7.24	7.40	7.61
Additional Size		0.16	0.37
Royal Park	5.46	6.91	7.33
Additional Size		1.45	1.87
Ryley	7.27	8.50	8.50
Additional Size		1.23	1.23
Tofield	8.25	8.85	8.85
Additional Size		0.60	0.60

¹Assume Dinant, Kingman, Bardo, Round Hill, Dodds, Haight, Inland, Shonts and Fitzallen closed.

²Assume, in addition, to ¹ that Warwick and Norma are closed.

Change of Permit Holders

Table 39 shows the number of permit holders for the crop year 1962-63, and the estimated number if various delivery points are assumed closed. The last column in Table 39 shows the estimated number of permit holders that would have delivered to remaining points if those points indicated in footnotes 1 and 2 were closed. The last three delivery points listed in Table 39 would be the most greatly affected. It is estimated that Royal Park would have acquired an additional 122 permit holders, Ryley an additional 135, and Tofield an additional 148.

TABLE 39. NUMBER OF PERMIT HOLDERS AT DELIVERY POINTS IN THE STUDY AREA AND ESTIMATED NUMBER IF CERTAIN GRAIN DELIVERY POINTS WERE CLOSED, 1962-63.

Delivery Point	Number of Permit Holders 1962-63	Estimated Number of Permit Holders 1962-63 ¹	Estimated Number of Permit Holders 1962-63 ²
Dinant	34	-	-
Kingman	131	-	-
Bardo	35	-	-
Round Hill	130	-	-
Dodds	37	-	-
Haight	59	-	-
Inland	138	-	-
Shonts	26	-	-
Fitzallen	33	-	-
Warwick	181	194	-
Norma	31	31	-
Lavoy	230	231	231
Two Hills	367	367	368
Bawlf	180	181	181
Camrose	280	303	303
Mundare	315	331	333
Willingdon	333	333	360
Armena	100	152	152
Hay Lakes	221	246	246
Kaleland	44	44	72
Holden	334	378	378
Hairy Hill	205	205	277
Ohaton	65	119	119
Vegreville	291	336	375
Royal Park	122	188	244
Ryley	217	352	352
Tofield	212	360	360
Total	4,351	4,351	4,351

¹Assume Dinant, Kingman, Bardo, Round Hill, Dodds, Haight, Inland, Shonts, and Fitzallen closed.

²Assume in addition to ¹ that Warwick and Norma are closed.

Appendix 1:

The following service activities were present in the communities of the area:

Too Small to Classify

Demay	Nil
Dinant	Nil
Fitzallen	Nil (grain elevator closed in 1969)
Shonts	Nil (grain elevator closed in 1969)
Bardo	Grain elevator.

Hamlets

Dodds	Grain elevators (2)
Haight	Post office, general store, (grain elevators closed in 1969)
Kaleland	Grain elevators (2)
Norma	Grain elevators (2)
Inland	Grain elevators (3)
Royal Park	Post office, general store, service station, grain elevators (4)
Warwick	Post office, confectionary with gas pumps, blacksmith shop, grain elevators (4)

Villages

Armena	Post office, school, general store, bulk oil depot, service station, oil company field office, church, horse boarding stable, outdoor rink, grain elevators (3)
Ohaton	Post office, general store, garage, service station, welding shop, implement dealer, county roads garage, church, community hall, hockey rink, sports park, grain elevators (2)
Kingman	Post office, school, general store, café, service stations (2), bulk oil dealer, churches (2), school repair shop, community hall, park, grain elevators (3)

Round Hill	Post office, school, general store, service stations (2), bulk oil dealers (3), church, fire hall, hotel, county roads depot, community hall, curling rink, ball park, grain elevators (4)
Hay Lakes	Post office, general store, farm supplies store, meat market and locker plant, service stations (2), garage, bulk oil dealers (2), implement dealer, hardware store, general insurance agent, welding shop, barber shop and pool room, dairy pool, hotel, café, utilities office, church, legion hall, fire hall, curling rink, grain elevators (4)
Lavoy	Post office, school, general stores (2), grocery store, garages (2), service station, bulk oil dealers (2), automobile dealer, automobile wrecker, county shop, blacksmith, Alberta government telephone plant, livestock shippers association, feed dealer, hotel, café, barber shop and pool room, churches (2), curling rink, grain elevators (5)
Hairy Hill	Post office, school, general stores (2), confectionairies (2), café, hardware and lumber, shoe repair shop, banks (2), hotel, farm implement dealer, blacksmith shop, automobile dealer, bulk oil agents (3), service stations (2), school bus depot, churches (2), community hall, fire hall, feed mill, grain elevators (5)
Bawlf	Post office, schools (2), general store, grocery store, cafés (2), hotel, garages with gas pumps (3), bulk oil dealers (3), excavating contractor, septic tank sales, insurance office, highway maintenance depot, school bus depot, village office, recreation hall, legion hall, fire hall, sports association, churches (3), curling rink, grain elevators (4)
<u>Towns</u>	
Ryley	Post office, schools (2) grocery store, general store, bakery, variety store, hardware store, cafés (3), barber, pool hall, shoe repair shop, beauty parlour, masseur, hotel, lawyer, doctor, nurse, bank, town office, laundromat, county office, hotel, bulk oil dealer, garage and service stations (4), creamery, provincial government telephone office, fire hall, county garage, scrap metal yard, trucking and construction company, swimming pool, district agriculturalist, curling rink, legion hall, community hall, churches (3), grain elevators (3)

Greater Towns

Willingdon

Post office, schools (2), grocery stores (3), meat market, hardware store, liquor store, lumber yards (2), drive-in restaurant, hotel, bank, beauty parlours (2), barber shop and pool room, blacksmith and welder, real estate and general insurance, livestock instruments and supplies, bottle depots (2), egg grading stations (2), plumbing and heating sales and service, poultry wholesalers (2), bulk oil dealers (5), garages (3), service stations (2), implement dealers (3), automobile dealers (2), livestock dealers (2), hospital, health clinic, doctor, lawyer, license bureau, trucker, highway maintenance depot, village hall, recreation centre, curling rink, public utilities offices (2), churches (2), fire station, seed cleaning plant, grain elevators (6)

Mundare

Post office, schools (2), grocery stores (4), confectionary stores (2), meat market, supermarkets (2), general store, bakery, clothing store, café, liquor store, drug stores (2), barber shops (2), beauty parlour, banks (2), hotel, hardware store, electrical appliances sales and service (2), jeweller, bottle depot, dry cleaning agent, service stations (2), garages with pumps (2), automobile dealer, implement dealers (3), bulk oil dealers (3), lumber yard, shoe repair shop, accountant, general insurance agency, lawyer, doctor, hospital, provincial government telephone office, welder, pool hall, banquet and dance hall, recreation centre, curling rink, highway maintenance department, school bus depot, fire hall, town offices, churches (2), seminary, convent, seed cleaning plant, egg grading station, stockyard, livestock dealer, grain elevators (7)

Holden

Post office, schools (2), general stores (2), confectionaries (2), grocery stores (4), variety store, women's apparel store, butcher shop, hardware stores (2), liquor store, hotel, restaurants (2), dairy bar, locker plant, banks (2), insurance agency, real estate agency, notary public, accountant, auctioneer, public utilities offices (2), provincial government telephone office, fire station, village police, ambulance service, county road depot, county health unit office, school repair shop, village office, service stations (3), garages (2), bulk oil dealers (3), automobile dealers (3), implement dealers (3), building materials dealer, welding shop, beauty parlours (2), barber shops (3),

Holden (continued)

shoe repair shop, pool room, religious buildings (3), theatre, bowling alley, curling rink, recreation parks, community hall, legion hall, masonic hall, livestock dealer, poultry marketer, egg grading station, dairy pool, seed cleaning plant, feed mill, feed dealers (2), grain elevators (5)

Tofield

Post office, schools (2), meat market, grocery stores (2), general stores (3), ladies wear store, bakery, electrical appliances store, drug store, restaurants (3), hotel, tailor, dry cleaning plant, laundromat, barber shop, pool hall, beauty parlours (2), newspaper and printing shop, general insurance agencies (2), blacksmith, tinsmith, general contractor, lumber dealer, garage and service stations (6), automobile dealers (4), implement dealers (3), bulk oil dealers (4), real estate agent, hardware store, banks (2), lawyer, public utilities offices (2), provincial government telephone offices, town offices, town police, R.C.M.P. detachment, hospital, doctor, county roads depot, library, museum, fire station, churches (7), community hall, recreation centre, legion hall, curling rink, skating rink, masonic hall, golf club, express office, custom slaughter house, feed mill, creamery, grain elevators (3)

Two Hills

Post office, schools (2), grocery stores (4), general store, variety store, department stores (2), bakery, clothing stores (2), hardware store, drug store, jeweller, television sales and service, liquor store, beauty parlours (4), barber shop, farm supplies store, dairy, clinic, hospital, doctor, chiropractor, lawyer, real estate agent, insurance agency, district agriculturalist, district home economist, banks (2), provincial government telephone office, motel, hotel, restaurants (4), theatre, automobile dealers (3), garage, service stations (3), automobile parts dealer, auto paint and body shop, bulk oil dealers (4), implement dealers (3), lumber dealer, excavation contractor, building contractors (2), electrical contractor, painter and decorator, building materials dealer, welding shop, plumbing and gas fitting contractor, Chemcell Ltd., tank truck haulage, county repair shop, fire station, county offices, county highway maintenance yard, school bus depot, public utilities office, town offices, R.C.M.P. detachment, churches (4), poultry wholesaler, livestock dealer, feed dealer, hatchery, egg grading station, pool hall, community hall, curling rink, arena, fair grounds, playground, Chamber of Commerce, Legion hall, Lions club, Elks club, fish and game association, grain elevators (6)

Vegreville
Camrose

Services not listed as both these centres have a wide range of activities present.

Appendix 2. The following article from an Edmonton newspaper reveals an imaginative idea to promote rural living while commuting to work in Edmonton

Rural-bound residents given provincial help

The Alberta government has initiated a pilot project in three rural communities to help city residents move to the country.

Municipal Affairs Minister Fred Colborne said today the project went into operation Thursday July 31, 1969 and anyone who wants to take advantage of it may do so.

The project involves the communities of Holden, Ryley and Tofield, located from 40 to 60 miles east of Edmonton, and city residents wishing to relocate there are commute to work.

The government will guarantee loans taken out by people who wish to move to one of these three areas - up to 85 per cent of the total housing costs.

The percentage is based on a sliding scale and depends on the total amount of the loan. The maximum loan to be considered will be \$14,000.

The guarantee will cover persons who purchase vacant homes in the communities, those who purchase vacant homes in Edmonton and move them to the communities, or those who purchase vacant farm houses in surrounding areas and move them into the communities.

The pilot project, which, if successful, may be applied elsewhere to help sagging rural economies, is the result of a month-old attempt by the communities of Holden and Ryley, and now Tofield, to attract more families.

Realtor Mel Warren of Holden, a prime mover of the combined push, says by August commuter bus service will be offered. This will mean residents could get to Edmonton in less than an hour.

Holden and Ryley, nine miles apart, and Tofield are located on paved Highway 14.

Mr. Warren said all three communities have farm homes vacant which can be moved into townsites eight to 10 miles away.

He added there are 37 service lots available in Tofield (about \$300 a lot) and 20 each in Ryley and Holden (about \$200 each).

Seven families from Edmonton already have purchased vacant houses in Holden, four outlying farm dwellings have been taken, and five vacant houses have been purchased in Ryley.

The commuter service the three communities are attempting to arrange involves a 50-passenger school bus.

Plans call for the bus to leave Holden five days a week at 6:40 a.m., pick up commuters along the way at service stations (where they could probably park their cars) and get into the city by 7:50 a.m. The bus would return daily at 5:45 p.m. from a central Edmonton location. Cost of the commuter service, Mr. Warren says, would tentatively be \$35 a month. The service will be operating by Aug. 1.

The communities of Holden and Ryley, which started promoting a move to the country about a month ago, are amazed at the response.

More than 400 persons have made inquiries.

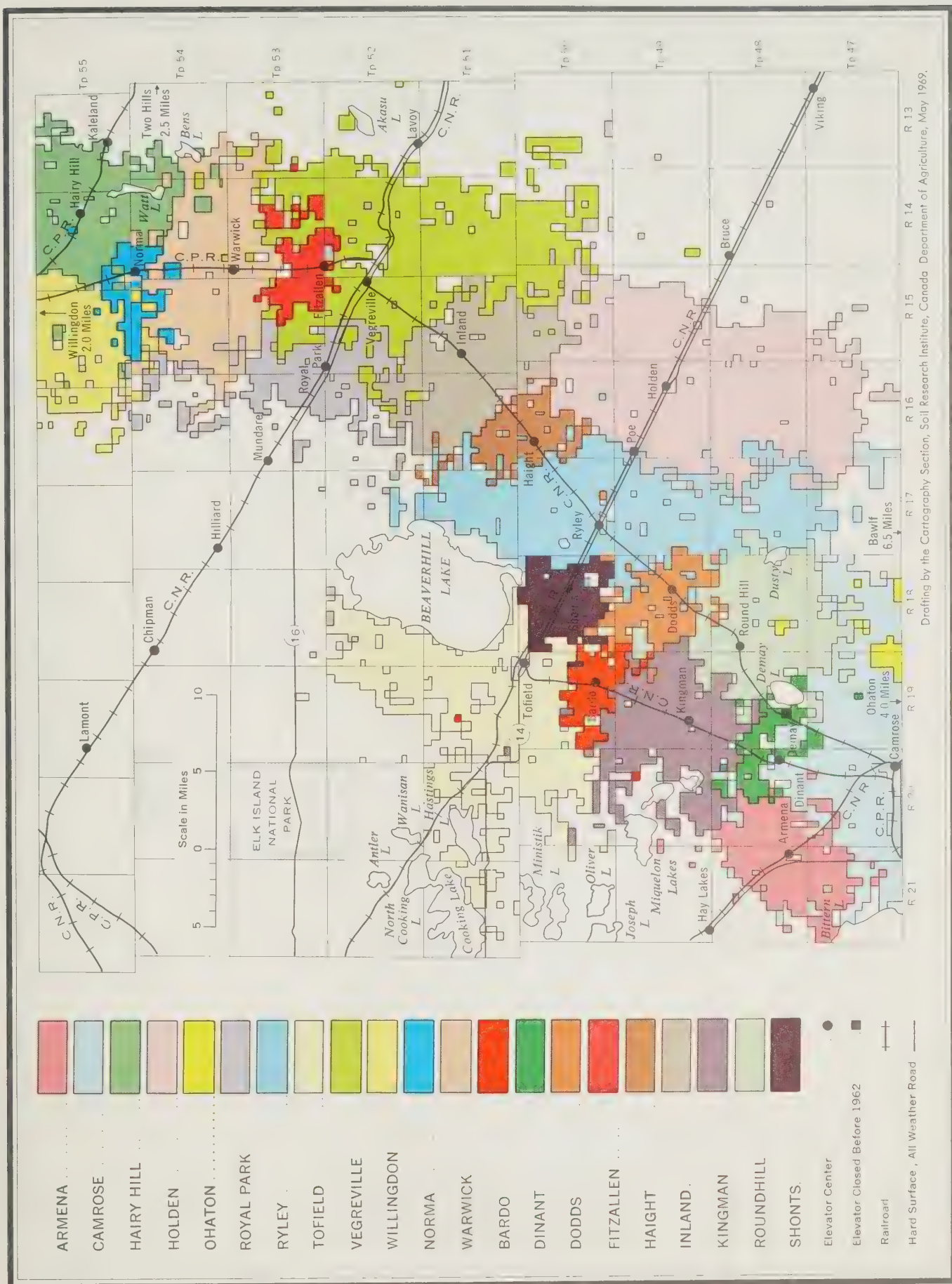


Figure 1. Grain farms in relation to their respective delivery points, Camrose-Vegreville Region, Alberta, 1962-63

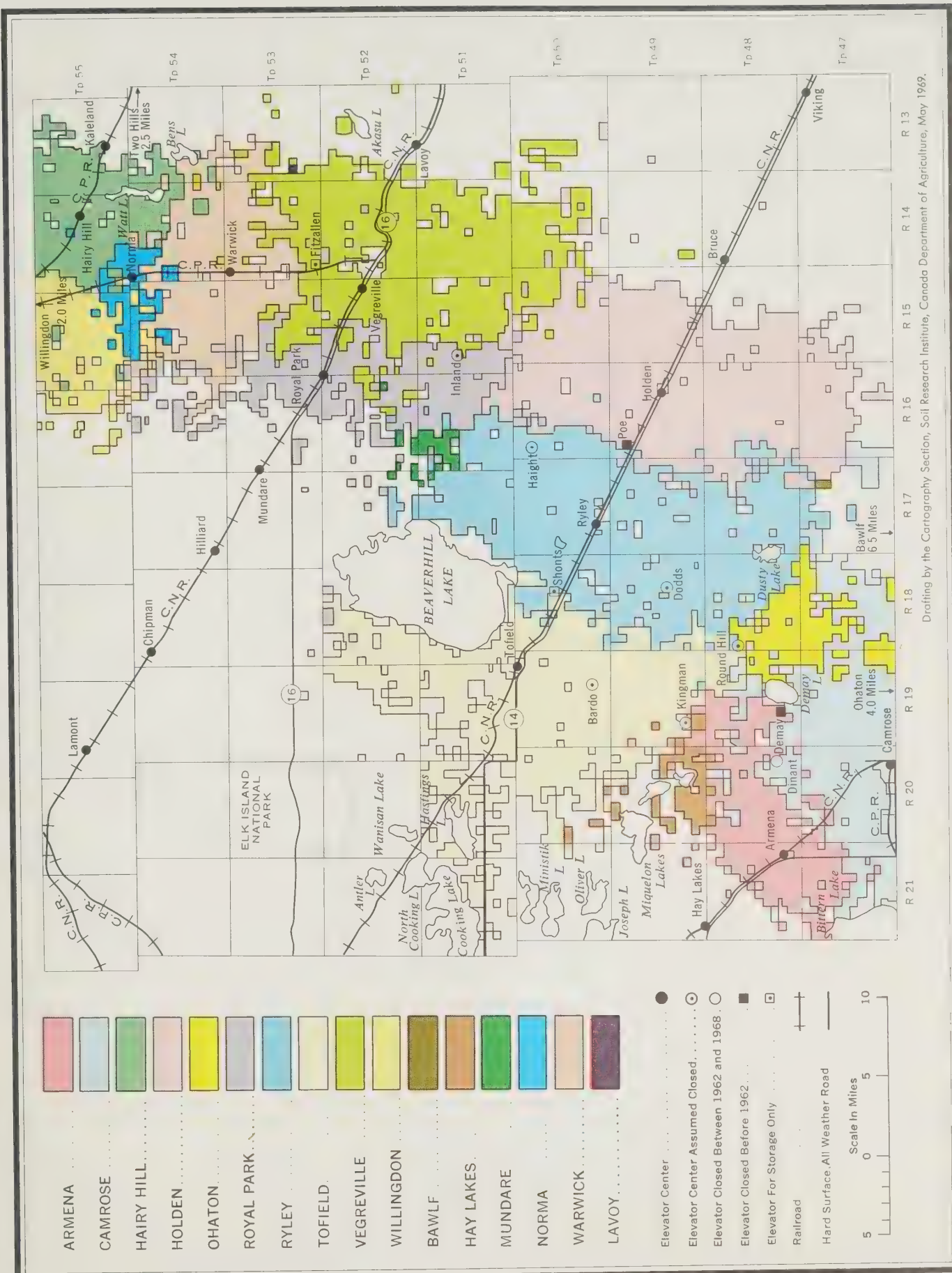


Figure 2. Grain farms and their probable delivery points had the elevators specified in Table 32 been closed in 1962-63

Drafting by the Cartography Section, Soil Research Institute, Canada Department of Agriculture, May 1969.

SOUS-CLASSE¹

À l'exception de la classe I, les classes sont subdivisées en sous-classes
selon les limitations reconnues. Ces sous-classes sont les suivantes :

LASSE C climat résévant/chaud : température de 15°C à 25°C, faible précipitation, mauvaise distribution.

- SOUS CLASSE E : dommages par l'érosion des dommages causés par

SOUS CLASSE 1 inondation — Les crues des cours d'eau et des lacs limitent

SOUS-CLASSE P pierrosité -- les pierres nuisent aux travaux de culture et d'entretien labour ensemencement moisson

- **SOUS-CLASSE R** mince sur roche consolidée — la roche consolidée se trouve à moins de trois pieds de la surface.

SOUS-CLASSE 5 limitations du sol — Une ou plusieurs des limitations suivantes peuvent exister, cumulativement ou non :

des roches g  n  e    cause de la nature du sol, la faible fertilit   naturelle, faible pouvoir de r  tention d'eau, s  cheresse.

SOUS CLASSE T relief défavorable — l'utilisation est restreinte soit à cause de la déclivité, soit à cause du matériel d'entretien.

SOUS CLASSE W excès d'humidité — l'utilisation est restreinte par un excès d'eau provenant de sources extérieures.

excès d'eau provenant de couées autres que l'inondation, soit mauvais drainage, plan d'eau élevé, infiltration et ruissellement des eaux venant

• **CLASSE X** : Soit 6 limitation modérée usée par effet cumulé

CONVENTIONS

Les chiffres de grand format indiquent, en classe,

les petits chiffres placés à la droite d'un numéro de classe indiquent la proportion de cette classe sur un total de 10. Les lettres placées à la droite

*Indique une classe ou sous-classe mineure, figure pas sur le référentiel.

EXEMPLES

4^T_P Désigne une superficie de classe 4 dont les limitations sont le relief et la piétopsite.

2143 Désigne une superficie de classe 2 avec limitation de relief et de classe 4 avec limitation de surélevation dans les

N.B. le couleur utilisée pour le contour est différente

N.B. la couleur utilisée pour un complexe est déterminée par le premier chiffre du symbole. Généralement la classe dominante est indiquée la première dans un complexe. Cependant, dans les complexes formés par

première dans un complexe. Cependant, dans les complexes formés de deux classes arables (1-4) et d'une classe non-arable (5-7) les classes arables apparaissent les premières si leur superficie totale couvre le moitié ou plus

de l'unité cartographique

Cette frame s'ajoute à la couleur dans tous les complexes
exceptés ceux dont les proportions sont de 82, 811 et 91

SOUS-RÉGIONS CLIMATIQUES

EDMONTON 03 H

Year	Population
1	4,000
1	4,000
11	4,000
11	4,000
11	4,000

Route, toute saison
Route, période sèche
Route de terre, sentier
Chemin de fer
Ligne de transport d'énergie
Unité de township

Good, all weather
Good, dry weather
Cart track, trail
halfway
Power transmission line
Township boundary

EDMONTON
ALBERTA

WEST OF FOURTH MERIDIAN — OUEST DU QUATRIÈME



CANADA LAND INVENTORY SOIL CAPABILITY FOR AGRICULTURE

DESCRIPTIVE LEGEND

In this classification the mineral soils are grouped into seven classes on the basis of soil survey information. Soils in classes 1, 2, 3 and 4 are considered capable of sustained use for cultivated field crops. Those in classes 5 and 6 are only for perennial forage crops and those in class 7 for neither.

Some of the important factors on which the classification is based are:

- The soils will be well managed and cropped, under a largely mechanized system.
- Land requiring improvement, including clearing, that can be made economically by the farmer himself, is classed according to its limitations or hazards in use after the improvements have been made. Land requiring improvements beyond the means of the farmer himself is classed according to its present condition.
- The following are not considered: distance to market, kind of roads, location, size of farms, type of ownership, cultural patterns, skill or resources of individual owner, and hazard of crop damage by storms.

The classification does not include capability of soils for trees, tree farms, seed beds, ornamental plants, recreation, or wildlife.

The classes are based on intensity, rather than kind, of their limitations for agriculture. Each class includes many kinds of soils, and many of the soils in any class require little management and treatment.

CLASS 1 SOILS IN THIS CLASS HAVE NO SIGNIFICANT LIMITATIONS IN USE FOR CROPS.

The soils are deep, are well to imperfectly drained, hold moisture well, and in the virgin state were well supplied with plant nutrients. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for a wide range of field crops.

CLASS 2 SOILS IN THIS CLASS HAVE MODERATE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE MODERATE CONSERVATION PRACTICES.

The soils are deep and hold moisture well. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a fairly wide range of crops.

CLASS 3 SOILS IN THIS CLASS HAVE MODERATELY SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES.

The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and area of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management they are fair to moderately high in productivity for a fair range of crops.

CLASS 4 SOILS IN THIS CLASS HAVE SEVERE LIMITATIONS THAT RESTRICT THE RANGE OF CROPS OR REQUIRE SPECIAL CONSERVATION PRACTICES, OR BOTH.

The limitations seriously affect one or more of the following practices: timing and area of tillage; planting and harvesting; choice of crops; and methods of conservation. The soils are low to fair in productivity for a fair range of crops but may have high productivity for a specially adapted crop.

CLASS 5 SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE.

The limitations are so severe that the soils are not capable of use for sustained production of oilseed field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by use of farm machinery. The improvement practices may include clearing of bush, cultivation, seeding, fertilizing, or water control.

CLASS 6 SOILS IN THIS CLASS ARE CAPABLE ONLY OF PRODUCING PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE NOT FEASIBLE.

The soils provide some sustained grazing for farm animals, but the limitations are so severe that improvement by use of farm machinery is impractical. The terrain may be unsuitable for use of farm machinery, or the soils may not require to improvement, or the grazing season may be very short.

CLASS 7 SOILS IN THIS CLASS HAVE NO CAPABILITY FOR AGRICULTURE OR PERMANENT PASTURE.

This class also includes rockland, other non-soil areas, and bodies of water too small to show on the map.

0 ORGANIC SOILS (Not placed in capability classes).

SUBCLASSES

Escaping Class 1, the classes are divided into subclasses on the basis of kind of limitation. The subclasses are as follows:

SUBCLASS C: adverse climate — The main limitation is low temperature or low or poor distribution of rainfall during the cropping season, or a combination of them.

SUBCLASS E: erosion damage — Past damage from erosion limits agricultural use of the land.

SUBCLASS I: inundation — Flooding by streams or lakes limits agricultural use.

SUBCLASS P: rocks — Stones interfere with tillage, planting, and harvesting.

SUBCLASS R: shallowness to solid bedrock — Solid bedrock is less than three feet from the surface.

SUBCLASS S: soil limitations — Limitations include one or more of the following: undesirable structure, low permeability, a restricted rooting zone because of soil characteristics, low natural fertility, low moisture-holding capacity, salinity.

SUBCLASS T: uneven topography — Either steepness or the pattern of slopes limits agricultural use.

SUBCLASS W: excess water — Excess water other than from flooding limits use for agriculture. The excess water may be due to poor drainage, a high water table, seepage, or runoff from surrounding areas.

SUBCLASS X: soils having a moderate limitation caused by the cumulative effect of two or more adverse characteristics which singly are not serious enough to affect the class rating.

CONVENTIONS

Large or small numerals placed after a class numeral give the approximate proportion of the class out of a total of 10, places placed after class numerals denote the subclass, i.e. limitations.

* Denotes class or subclass not present on this map.

EXAMPLES

An area of Class 4 land with topography and stoniness limitations is shown thus: 4P.

An area of Class 2 land with topographic limitation, and Class 4 with stoniness limitation, in the proportions of 7:3 is shown thus: 2443.

N.B. The color used for a complex area is determined by the first digit of the symbol. Generally the dominant class appears first in a complex symbol. However, in complexes of two or more classes (1-4) and one non-able class (5-7), the orable classes are shown first if they total one half or more of the map unit.

This pattern is overlaid on the color in complex areas, except those having ratios of 8:2, 8:1, and 9:1.

CLIMATIC SUBREGIONS

EDMONTON 83 H

Subregion Limitation

I None

II Moderate

III Moderately severe

IV Severe

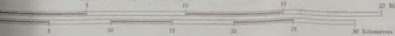
V Very severe

EDMONTON — 83H

EDMONTON ALBERTA

OF FOURTH MERIDIAN — OUEST DU QUATRIÈME MÉRIDIEN

Scale 1:250,000 Echelle



Copyright by the Soil Survey Institute, Research Branch, Canadian Department of Agriculture with the support of ABIA, Canadian Department of Forestry and Rural Development. Map made and printed by the Survey and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, 1967. Capability classification by the Alberta Soil Survey with the support of ABIA, Canadian Department of Forestry and Rural Development.

DESCRIPTION GÉNÉRALE — RÉGION DE LA
CARTE 83H — EDMONTON

roads radiate in all directions from Edmonton, joining with good secondary roads. As a result no farmer is more than three miles from a gravel road or a similarly well serviced by railway (CNR, CPR, and NAB). Edmonton with all the surrounding smaller centers. No farmer is more than 10 miles from a railway station.

CLIMAT

of the climate in Edmonton map these areas is continental, characterizing warm summers and cold winters. The mean summer temperature in July, being the warmest month with an average of 42°F, the mean temperature is about 16°F, January, with an average temperature of 4°F, the coldest month. Except for the northeast corner, the entire area has a period (32°F) of more than 90 days. The growing season is about 150 days in length, starting about April 20-25 and ending about October 6-11. The number of degree-days during the growing season is 2,000 to 2,350, with the maximum of the southwest and northwest corner of the area, which has less

ulation varies from 14 to 18 inches, increasing from east to west. Annually 70 percent of H. falls during the summer, the water deficit is

PRINCIPALES CARACTÉRISTIQUES DES SOLS

In a glaciated area, the soils have developed on glacial till, and deposits induced by postglacial sedimentation, such as lacustrine, alluvial, and aeolian. These Pleistocene deposits are almost entirely of Edmonton formation origin, an exception is the southwest corner of the area, which is of a formation origin. About 85 percent of the area is comprised of sand and on glacial till, about 25 percent on lacustrine deposits, and about 10 percent on alluvial and aeolian deposits.

AGRICULTURE

ing farming in the area was in about 1560. By 1890 about 10,000 acres of land were being farmed in the vicinity of what is now Edmonton. Then in 1892 the railway reached Edmonton and settlement was greatly accelerated. Today there are over 10,000 farm operators, with an average farm size of about 300 acres. Approximately 70 percent of the area has been improved for agriculture.

ough the area around Edmonton has a small acreage of specialty crops, potatoes and vegetables, the main emphasis is on dairying. For this there is a larger proportion of large crops in the Edmonton area than elsewhere in the map sheet area.

ity classification by A. A. Ekberg, based on soils information contained in Soil Survey Reports.

Le gaz naturel a été découvert durant les années 20 et le pétrole la région compte des centaines de puits de pétrole et de gaz et si le pétrochimique s'est établi à Edmonton et aux environs, le gaz n'a pas remplacé graduellement la houille à des fins industrielles et domestiques d'ici, le charbon sert seulement dans quelques maisons de ferreux. Ne sont les mines de charbon qui sont abondantes dans la région. Ne

— 9 —

CLIMAT

PRINCIPALES CARACTÉRISTIQUES DES SOLS

Ordre des chamoisens. — Environ la moitié des sols de la région d'appartient de cet ordre. Ils sont en grande partie de couleur noire et se ressemblent presque tous les types de matériaux déjà mentionnés. D'une façon générale, ce sont des sols agricoles de haute qualité et il s'en trouve dans toute la région. Les chamoisens occupent principalement les environs de la ville d'Alger, ainsi que les zones de la plaine et les zones montagneuses.

Ordre des podzols. — Ce groupe de sols se rencontre principalement le long du lac Cooking et, de place en place, le long des lacs au nord de la région. Ce sont en grande partie des sols boisés gris foncés et gris boisés. Les podzols couvrent environ 10 p. 100 de la superficie.

Trois autres ordres se trouvent dans la région, et ce sont les sols gleyés, les sols régosoliques et les sols organiques, qui représentent en tout 10 p. 100 de la région. Ils sont disséminés par toute la région et généralement à l'intérieur des sols. On ne trouve généralement pas les terres

AGRICULTURE

Les premières fermes de la région ont été établies vers 1860. En 1899, 10 000 acres étaient exploitées à l'endroit où se trouve présentement d'Edmonton. Vers 1892, un premier chemin de fer atteignait Edmonton; en suite, la colonisation s'est accélérée considérablement. On compte d'hui plus de 10 000 exploitants et la superficie moyenne des fermes

On a toujours pratiqué la polyculture dans la région. Jusqu'en 1950, principale récolte était l'avoine qui a été remplacée par celle du blé. Depuis 1950, l'orge est devenue la principale récolte de la zone, mais le blé a conservé sa place dans l'est. Les superficies en foin ont petit à petit et elles atteignent 8 p. 100 présentement. Au cours des

Autour de la ville d'Edmonton, de faibles superficies sont consacrées à des cultures spéciales comme les pommes de terre et les légumes, mais la majeure partie de l'industrie laitière. Pour cette raison, il y a plus de cultures agricoles autour de la ville que dans le reste de la région.

Classement des possibilités agricoles par A. A. Ejeangaard basé sur les
liées des rapports pédologiques de l'Alberta.



